

**Wampanoag Tribe Of Gay Head (Aquinnah)  
Fish & Shellfish Consumption Survey  
Project Planning and Development Plan  
FINAL DRAFT 9/19/2002  
APPROVAL AND SIGNATURE PAGE**

This QAPP has been developed through consultation between the parties as identified by signature found below. This QAPP has met the requirements of the EPA Project Officer and the EPA Quality Assurance Officer as attested by their signature on this approval page. Furthermore the Wampanoag Tribe submits that this QAPP will be utilized in its current and approved format to complete the work objectives described herein as agreed upon as of the date of signature.

Jeff Day, Project Manager  
Wampanoag Tribe of Gay Head (Aquinnah)

June 2002  
(Conditional)

9/16/02  
September 2002  
(Final)

Valerie Bataille- Ferry  
US EPA Project Officer

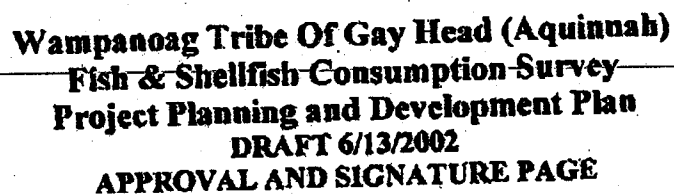
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## TRIBAL BACKGROUND

The Wampanoag Tribe (Aquinnah) is located on Martha's Vineyard Island off the Southeastern Massachusetts coast in the Atlantic Ocean. Historically, the Tribe has utilized the Vineyard Sound, Atlantic Ocean, coastal ponds, freshwater streams to fish and harvest shellfish for subsistence, commercial profit and to supplement overall protein needs. Historical shell midden sites located on Martha's Vineyard have been carbon dated to 10,000 years old. Contained within them is evidence of the variety of seafood, which were a mainstay of the Wampanoag diet. Today the Wampanoag are well known as a culture of seafaring people who have become famous for their skills and participation in the whaling industry.

High rates of chronic illness are cause for concern and have lead the Tribe to question the health risk to tribal membership from various lifestyle and cultural factors including; environmental toxicity, unhealthy lifestyle habits, i.e. smoking, alcohol consumption and contaminant intake through sustenance foods consumption. Air deposition and solid waste disposal of toxics and heavy metals pose a health risk to Tribal members. Currently levels of fish, shellfish, and wildlife game consumption on the Tribe's traditional lands are not quantified. Furthermore, the number of tribal members who fish for subsistence or whose preference for traditional diet needs to be understood. This information can be used by the Tribe to target health education and awareness programs to reduce and communicate risk.

The Tribe has planned to conduct a baseline assessment of toxins (i.e. metals, polychlorinated biphenyls (PCB) as well as a variety of chemicals known to be associated with air deposition and explosives.) in fish tissue of harvested marine species found in Vineyard Sound and Menemsha Pond during the fall of 2002. Marine species included in this study are lobster, clam, mussels, striped bass, bluefish, flounder and scallop. Most of these species are harvested for commercial purposes. Some additional marine species that are considered part of the Tribal diet include herring, mackerel, tuna and swordfish. This fish tissue study should provide an estimate of the bioaccumulated toxins within commonly eaten locally available marine species. This Consumption Survey will assist the Tribe in developing a fish tissue-sampling plan and risk communication strategy, which correlates with current observed tribal consumption patterns. This survey will not be used to develop historical consumption patterns for the Wampanoag Tribal members. Moreover the information contained in this survey is personal to the Tribal members and therefore confidential and thereby considered confidential personal privacy information as defined in the Freedom of Information Act (F.O.I.A.) 40 CFR sec 2.200, and may also qualify as confidential business information pursuant to FOIA.

## **PROBLEM STATEMENT**

Determine credible information regarding fish and shellfish consumption rates for our Tribal membership living on Martha's Vineyard Island. Collect data regarding fish and shellfish consumption rates for subpopulations within the Wampanoag Tribe who are considered at highest risk from environmental contamination. Those subpopulations of concern are the children ages 0-15, women of child bearing age 16-40, and tribal elders ages 55+ (as defined by the Tribal Council).

## **STUDY PRIMARY GOAL**

Determine a credible non-commercially plus commercially obtained fish & shellfish consumption rate (expressed in grams/person/day) by Tribal members on Martha's Vineyard during all four seasons of the previous year. This survey is not intended to assess historical fish consumption rates. It is intended to accurately describe the current observed consumption rate of the sub populations of the Wampanoag Tribe of Gay Head.

## **OBJECTIVES**

Collect data and information on overall fish and shellfish consumption of the community that includes fish food products obtained from grocery stores, fish markets, recreational and subsistence harvests for 50% of the known Tribal households.

- Identify the most frequented specific locations where fish species (regularly consumed by the community members) are harvested, purchased or otherwise obtained.
- Statistically identify the number of community members who consume fish and shellfish.
- Create a survey form and questions that will provide a credible description of the Tribe's current fish consumption habits.
- Determine each species of fish and shellfish that are being consumed by tribal households and what quantities of fish are being consumed per household for 50% of the known Tribal households.
- Estimate mean per capita amounts of fish and shellfish consumed by the Tribe and the number that are freshly caught and amounts consumed that are obtained commercially.
- Provide alternative calculations of per capita amounts consumed will include and exclude non-consumers.

- Estimate mean per capita amounts of fish and shellfish consumed by elders (ages 55+). To be 95% confident of the mean consumption to within a bound of 5 grams, assuming a standard deviation = 30. 33 Tribal elders need to be surveyed.
  - Estimate mean per capita amounts of fish and shellfish consumed by children under age 16 (0-15). To be 95% confident of the mean consumption to within a bound of 5 grams, assuming a standard deviation = 30. 51 Children need to be surveyed.
  - Calculate estimation of mean per capita consumption by species of fish and shellfish by children under 16 and women of childbearing age (16-40). To be 95% confident of the mean consumption to within a bound of 5 grams, assuming a standard deviation = 30. 35 women of Childbearing ages need to be surveyed.
-

## PROJECT ORGANIZATION

Out of the 162 known Tribal households on Martha's Vineyard, 81 (50%) will be selected as targets for the survey. One hundred and six of those households contain one or more high-risk residents. Of those 81 target households at least 43 (53%) shall be comprised of children or women of childbearing age, and 34 (41%) elders. In order to achieve the goals of 100% completeness more households will be added to the survey target to make up for non-responses. These additional surveys shall be separated from the original target population and the data shall be individually identified to allow for a statistical analysis to include the original target audience vs. the expanded target audience. The house-to-house survey will be a personal interview conducted by tribal staff with the households' primary food preparer, preferably the adult that prepares the meals, will be interviewed.

The Wampanoag Tribe's Natural Resources Department will implement this study and will be assisted by the contracted environmental consulting firm, Health Risk Consultants, Inc. (HRC) (Fairfield, CT).

- Jeff Day - Ranger Supervisor- Oversees project and insures that study is proceeding according to time frame and plan. Ranger informs EPA project manager of progress, delays or modifications. Ranger resolves any issues that come up during the survey. Facilitates training and discussion of the survey materials. Will design the survey and assist in the door-to-door survey administration. If the consumption survey needs revision, survey will be evaluated and adjusted to satisfy study objectives by the ranger and modifications will be sent to EPA (both QA Office and EPA Project Leader) for approval. Ranger will conduct field audits of personal interviewer's information for Quality Assurance (QA). The ranger shall establish a checklist for data anomalies for those staff that are entering data into database from field interview forms. The Ranger Supervisor will create and administer a four-day training session to train interviewers as a means to ensure that all interviewers have a consistent knowledge base and that information is gathered consistently and without biasing the responses. The Ranger Supervisor shall check all data collected and entered into the database system for transcription errors. The Statistician Consultant and the Ranger Supervisor will predetermine the target population.
- Laurie Perry and Anna Gilmore, Survey Assistants (SA) and Hillary Crook, Water Resource Technician (WRT): The SA & WRT report directly to the Ranger Supervisor. The SA and WRT will conduct one-on-one interviews with the identified survey population. The SA and WRT will complete survey forms (sample form is Attachment B), at each household with interviewers either asking direct questions of the head of the household, or by viewing a video that presents a Tribal elder asking the questions. With either approach, the interviewer will be entering the answers onto the form. These two people will attend training session(s), which will be facilitated by the Ranger Supervisor. Instructions for the interviewers are contained in Attachment H. The interviewers will be responsible for arranging interviews schedule with the entire target population. They will be responsible for completing at least two interviews per day. This includes locating

the households and traveling to and from interview sites and completing the interviews. (HRC's Statistician Consultant and the Ranger Supervisor will predetermine the target population.) At the end of each interviewing day, the lead interviewer shall pass the data form to the assistant and have the assistant check the document for clarity and completeness. Any corrections or assessment of follow-up will be made then and annotated on the survey itself in the activity log. A file will be created for each household which shall include the following: household location information, original completed survey form, QA check off for each stage of data validation and printout of data spreadsheet for that household's data (contained on the first page of the survey itself).

- Andrea L. Boissevain, M.P.H., David R. Brown, Sc.D., Susanne L. Simon, M.S., M.P.H., and Michael Knapp, Ph.D. (Health Risk Consultants, Inc. (HRC)) – HRC consultants will review EPA's *Guidance for Conducting Fish and Wildlife Consumption Surveys*<sup>1</sup>. After reviewing select previously conducted fish surveys by Native Americans as well as other pertinent data, HRC may recommend changes to the fish consumption survey. The intent of such changes will be to reduce bias in survey design. Ms. Boissevain will serve as the project contact and will be responsible for reporting directly to the Ranger on a regular basis.

Drs. Brown and Knapp will assist in the design and selection of respondents to minimize bias by applying a standard formula based upon demographics. Dr. Knapp will serve as the project's statistician and data base developer. He will provide guidance on developing a data entry system that will reduce error, while keeping project costs down. Dr. Knapp will design database-using ACCESS, a Microsoft product. After the survey results are entered into the database HRC will validate them. HRC analysis will provide fish consumption estimates for overall and sub populations as well as a range of descriptive statistics<sup>2</sup>. Ms. Simon will develop and present a training seminar to those individuals who will be responsible for administering the survey. In addition, Dr. Knapp will provide training to those responsible for data entry and data manipulation.

## **TRAINING OF PERSONNEL TO PERFORM SURVEYS**

The Ranger and Greg Skomal, Massachusetts Fisheries Biologist, will describe fish species listed within the survey, reference pictures and descriptions of the fish species (Attachment G- Common Fish Species of Massachusetts Identification Guide) will be provided to surveyors in a familiarization program.

Ms. Simon and Mrs. Boissevain (HRC) will instruct interviewers on the importance of unbiased surveys and missing data. A draft outline of the material to be covered in such a training program is included in Attachment H (Training Program Agenda). Interviewers

<sup>1</sup> EPA, 1996. Office of Water. EPA-623-B-98-007. November 1996.

<sup>2</sup> Descriptive Statistics classically permit one to characterize the distribution of the elements under study, in this case it refers to the rate(s) of fish consumption. Means, medians, averages are provided as well standard deviations and standard errors. This will be helpful when accurately portraying where the sub populations lay with respect the overall consumption rates.



will have an opportunity to "practice" during the session using the actual survey, providing yet another avenue for operationally testing the instrument. In addition, HRC will make the interviewers aware of the importance that questions regarding health effects should be acknowledged and brought back to the office for HRC staff to answer. As part of the training program, HRC will utilize visual aids to demonstrate species identification<sup>3</sup>, meal portion sizes, and methods of food preparation—all of which can help reduce recall bias at time of interview.

Dr. Knapp will also provide training on data entry with a brief overview of the capabilities of the ACCESS database. Data management and data entry quality controls will be discussed. Interviewers will have an opportunity to "practice" during the session using the actual survey, providing yet another avenue for operationally testing the instrument. HRC consultants will make themselves available to answer data-related questions.

In order to test the usefulness of the survey instrument the interviewers shall conduct a project pilot test. The pilot test will consist of administering the survey on 5 tribal employees at the Tribal government administration building. The interviews shall all be monitored for consistency of questions and non-bias. Prepared answers shall be checked to assure accurate recording of statements within the pilot survey. Results from the operational testing of the survey will be shared with HRC so that any adjustments to the database can be made prior to entering the test data.

## **DATA ENTRY and DATABASE DEVELOPMENT**

Data entry can be accomplished in many ways depending on the training of the data entry personnel and the amount of time and money a project wants to devote to this endeavor. HRC has been involved in projects where the data are entered directly into a spreadsheet from a pre-coded questionnaire as well as in projects where data entry is facilitated vis-a-vis a data entry screen that is a replica of the questionnaire. Computer applications coupled with personnel efforts to transcribe and translate survey questions into discrete variables that can be entered into a database are integral to affording an accurate and bias-free process.

Dr. Knapp will work with the Ranger to determine what is the most appropriate approach in order to reduce errors and keep within project costs. Dr. Knapp will develop a coded response form where survey information can essentially be tracked from the original form to the discrete variable input sheet.

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<sup>3</sup> This portion may take place at another time whereby the Massachusetts Fisheries Biologist, Greg Skomal, will present information on species identification.

## PROJECT SCHEDULE

Natural Resources staff will implement the survey and be assigned to households to conduct a person-to-person interview with the adult head of household or preferably the person who primarily prepares the meals for the family. Data from this consumption survey shall be used to validate selected target species for the Tribe's Fish Tissue Sampling Project. The completion date of 50% of the target surveys must be one month prior to the beginning of the fish tissue sampling study.

Survey Approval with EPA Consultation	June 2002
Final Consumption Survey Format Approved	June 2002
Survey Assistant and Environmental Technician are trained	June 2002
First 50% of Target Surveys are completed	July 2002
Consultant Reviews Statistics and make changes to Fish Tissue Sampling	August 2002
65% of target audience is achieved	August 2002
80% of Target Audience is achieved	September 2002
Draft report of data collected from Summer Survey completed	October 2002

## SURVEY POPULATION

In fiscal year 2000 the Wampanoag Tribe purchased software to enable it to conduct and record its own Tribal member census data. The household composition data, population distribution, and numbers of sub-populations used within this report are all derived from this Tribal Census 2000 database. After review of the data from the 2000 census some errors were discovered which has lead to variability in the numbers represented within this project description. All of these variances occur within an acceptable standard deviation for our study design and planning purposes. The study itself will assist the tribe in better understanding the Tribal member distribution and household composition in the year 2002.

There are 162 known WTGHA households on Martha's Vineyard. One hundred and six homes contain one or more high-risk subpopulation members. Forty-seven homes with children (0-15), forty-one homes with women of childbearing age (16-40)\*, and 36 homes with elders (55+). (Elder's determination is Tribal Council designated age of 55 plus which entitles members of the Tribe to be eligible for certain services provided to elders only. It is lower than the national senior citizen age because of the dramatically lower average life expectancy age of Native Americans.) Eighteen homes contain a combination of children and women of childbearing age.

TABLE 1.1 describing the distribution of individual tribal members across the Vineyard.

Category	Aquinnah	Oak Bluffs	Edgartown	Tisbury	W. Tisbury	Total
Women (16-40)	19	12	0	15	1	47
Child (0-15)	27	16	2	22	4	71
Elders (55+)	20	7	2	11	0	40
Others	43	31	6	35	5	120
Total	109	66	10	83	10	278

- = Based upon analysis of mothers' age at time of birth compiled by J. Manning.

## STATISTICAL ANALYSIS

### Survey Size Necessary to Calculate Mean Consumption Rates:

#### POPULATION SIZE:

278 enrolled tribal members who live on Martha's Vineyard.

Women aged 16-40: 47

All individuals ages 0-15: 71

All individuals ages 55+: 40

#### SAMPLE SIZE DETERMINATION FOR $\mu$ FROM A FINITE POPULATION:

$$n = \frac{\sigma^2}{\frac{B^2}{z^2} + \frac{\sigma^2}{N}}$$

where

$n$  = required sample size

$N$  = population size

$z$  = z-score for  $(1-\alpha)\%$  confidence

$B$  = the bound within which you want to estimate  $\mu$

$\sigma$  = standard deviation

#### SAMPLE SIZE OF THE WOMEN AGE 16-40 STRATUM:

To be 95% confident of the mean consumption to within a bound of 5 grams, assuming a standard deviation = 30 grams/day

$$n = 36$$

Sample size calculations using various bounds and standard deviations

	Run 1		Run 2		Run 3		Run 4	
	$B$	$\sigma$	$B$	$\sigma$	$B$	$\sigma$	$B$	$\sigma$
	5	30	3	30	5	10	3	10
Sample Size:	36		42		12		23	

#### SAMPLE SIZE OF THE CHILDREN AGE 0-15 STRATUM:

To be 95% confident of the mean consumption to within a bound of 5 grams, assuming a standard deviation = 30

$$n = 47$$

Sample Size Determinations using various bounds and standard deviations

	Run 1		Run 2		Run 3		Run 4	
	B	$\sigma$	B	$\sigma$	B	$\sigma$	B	$\sigma$
	5	30	3	30	5	10	3	10
Sample Size:	47		60		13		27	

#### SAMPLE SIZE OF THE ELDERS AGE 55+ STRATUM:

To be 95% confident of the mean consumption to within a bound of 5 grams, assuming a standard deviation = 30

$$n = 32$$

	Run 1		Run 2		Run 3		Run 4	
	B	$\sigma$	B	$\sigma$	B	$\sigma$	B	$\sigma$
	5	30	3	30	5	10	3	10
Sample Size:	32		37		12		21	

#### ESTIMATION OF THE STANDARD DEVIATION:

A standard deviation of approximately 30 grams was based on the approximation that 95% of observations fall within 2 standard deviations of the mean. In Appendix B of Volume 2: Risk Assessment and Fish Consumption Limits - Third Edition, available at <http://www.epa.gov/ost/fishadvice/volume2/v2appb.pdf>, Table B-3 contains mean and 95% consumption rates from several studies. In this table, the 95<sup>th</sup> percentile ranges from 2 Grams to 75 grams above the mean. For a conservative estimate, we set the standard deviation to 30 grams.

#### RECOMMENDATION:

Without more specific estimates of the variability in consumption rates between tribal members, an attempt will need to be made to sample all households with women aged 16-40, all households with children age 0-15, and all households with individuals aged 55+. Thus, all of the households containing one or more persons from a high-risk group will

need to be sampled. Given an attempt to obtain as high a response rate as possible from these 106 households, a bound of  $\sim 4$  would be obtained, assuming a 30 gram/day standard deviation and an 85% response rate.

If we have reason to expect smaller variation in consumption rates between members of the Tribe, a stratified random of the high-risk groups could be taken. For example, assuming a 10-gram/day standard deviation, the mean daily consumption rate could be estimated to within a bound of 3 grams/day (with 95% confidence) by a stratified random sample resulting in 22 responses from each high-risk group. However, at this time, we have no reason to assume that the standard deviation would be 10 grams/day, not 30 grams/day.

Note that the limitation of the above methodology results from the sampling of males 16-54 only by interviewing households containing at least one individual from a high-risk group. Similarly, the consumption rates of women 41-54 would be based on the consumption rates of women of this age range who reside in houses containing at least one person from a high-risk group.

If the consumption rate were not identical between those who reside in households containing at least one member of a high-risk group (children 0-15, women age 16-40, or adults 55+) and those who reside in a household without one member of the high-risk groups, then the above sampling methodology would introduce bias. If this bias is a source of concern, sampling of households which do not include individuals from a high-risk group would allow comparison with the individuals of the same stratum living in houses that do have a member from a high-risk group. Note, however, that the ability to test for this bias depends on the standard deviation. If the standard deviation is 10 grams, an additional 15 households without a high-risk individual would be sufficient to test for this possible source of bias. If the standard deviation is large (30 grams instead of 10 grams), and this bias is a source of concern, it would not be feasible to detect this bias in a sample of the population, and an attempt would need to be made to interview all households.

## **DELIVERABLES AND REPORTING**

### **STORAGE AND COMPILING OF INFORMATION**

Interviewers shall manually fill out the survey form during the interview. Immediately upon completing the interview, data QA will commence. The alternate assistant (not the interviewer) shall conduct QA procedures by checking accuracy, legibility and completeness of survey form. After completing the QA review, the reviewer shall initial and date the activity log on the front page of the survey. A hard copy shall be filed in a completed surveys form folder.

As stated earlier in the Quality Control for Data Entry section, after the first few survey forms have been successfully entered into the computer, a spreadsheet report for each one will be printed out to allow for comparison of the handwritten survey answers to those entered into the database. This is done as a quality control measure to determine how data entry is proceeding. It will help to de-bug the system should any unforeseen problems have arisen. If any corrections need to be made to the individual surveys it can be done then, and annotated on the survey activity log. Should there be any need to refine the database-entry process, those changes can be made as well. After the initial quality control check, then 10% of survey-entered data will be printed out for the Ranger Supervisor for comparison purposes. Upon completion of data quality review by the Ranger Supervisor, he shall initial and date the QA Compliance sheet to document his performance of QA procedures for that file.

All final file folders shall be placed in a file cabinet at the Ranger's Office. Upon completion of 50% of the target households the Ranger Supervisor shall copy each data file and send a copy of the database to HRC. Dr. Knapp shall perform data validation and initial analysis of results. At this time any recommendations for changing the format of the survey will be discussed with EPA Project leadership and the EPA QA Office.

## Quality Control Checks for Data Entry

One of the challenges in entering data is to have a system in place that allows cross-checking of data input, either by comparing one data entry operator input to another or by comparing a certain percentage of the data entered with the original data as entered on the survey itself. To reduce the number of human transcription errors, data will be entered directly off the survey into the database. The database screens have been designed to look the same as the survey and have the added feature of drop-down menus for those questions with choices. In addition, unanswered questions will present in grey until the data entry operator clicks on that question. This allows for visual recognition to assist the operator in keeping track of where he or she is in entering the data.

The first section of the survey contains an activity log with fields that allows us to track the processes of data entry and data review. The fields include a checklist of who and when certain steps were taken including: 1) who conducted the interview; 2) survey review prior to data entry (edited) to check for anomalies or missing data; 3) who entered the data; 4) who and when data verification was performed, i.e. was this a questionnaire that was included in a quality control check to see if data were being entered properly.

Interviewer's Initials: \_\_\_\_\_  
Edited:                      date \_\_\_\_\_ By \_\_\_\_\_  
Data Entry:                date \_\_\_\_\_ By \_\_\_\_\_  
Data Validation:        date \_\_\_\_\_ By \_\_\_\_\_  
Note for editor:

The data check will consist of a mini-program that randomly culls out 10% of surveys that have been entered to date and prints out the data as they have been entered into the database. The Ranger Supervisor will then compare the printout to the actual surveys to ensure that data has been entered properly. Any deviations will be noted and corrected. This will be performed early on and through out the process to ensure that, should errors arise, we can correct them and determine if they are of a systematic nature, or perhaps coding errors. If a high number of errors occur, then the percentage of surveys that undergo this kind of quality control check will increase. Errors will be stratified based on data entry operator as a means to determine the source of error.

## **FINAL REPORT**

The results of this survey shall be summarized in a final report. Ms. Boissevain will prepare the report with assistance from Ms. Simon, Drs. Brown and Knapp. The final report shall include a summary of the survey methods actually used, description of unusual occurrences. Confidentiality will be expressed and participants will be given the results of the survey upon completion of the statistical analysis. Personal data is considered confidential pursuant to the FOIA exemption for personal privacy. The information contained in this survey is personal to the Tribal members and therefore confidential and thereby considered confidential personal privacy information as defined in the Freedom of Information Act (F.O.I.A.) 40 CFR sec 2.200, and may also qualify as confidential business information pursuant to FOIA.



## **LIST OF ATTACHMENTS**

- Attachment A – Project Budget**
  - Attachment B – Sample Survey Questionnaire**
  - Attachment C – Sample Data Base**
  - Attachment D – Diagram of Fish Meal Preparation Styles**
  - Attachment E – Diagram of Fish Meal Portion Sizes (grams per meal)**
  - Attachment F – Common Fish Species of Massachusetts ID Guide**
  - Attachment G – Training Program Agenda**
  - Attachment H – Written Procedures for Interviewers to Follow**
  - Attachment I – Quality Control /Assurance Check-off Form**
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## ATTACHMENT A PROJECT BUDGET

### Staff

Ranger Supervisor Project Oversight & QA rate \$35.00/hr X 280 hrs \$9,800

Survey Assistant-Interviews, data collection, data processing \$20.00/hrsX600 \$12,000

### Contracts

Statistician Review Statistical modeling and analyze data \$16,334

Survey Administration and Data Base Management \$ 4,500

### Administration

	Ranger	SA
Survey Form Development	40 hrs	
Training	24	24hrs
Survey Administration	40	264
Survey QA	48	
Data Processing	40	128
Statistical Calculations	24	
Data Reporting	40	24
Data & Results Communication	24	

### Supplies

Survey Instruments Printing	\$ 400
Survey Reminders	\$ 600

### Vehicle Mileage/lease/gas

\$3,000

**TOTAL COST OF PROJECT**

**\$46,634**

**ATTACHMENT B**  
**Sample Survey Questionnaire**

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# Wampanoag Tribe Fish & Shellfish Consumption Survey

## SECTION 1: SURVEY/ACTIVITY LOG

### DATE CONTACTED to establish interview:

(Enter month/day/year, and time of day. Allow up to eight attempts to arrange an appointment. Enter Code NR for no response of L/M for left message with someone who answered the phone or answering machine/voice message system. Enter C for completed call.)

1) date/time _____	Code _____	5) date/time _____	Code _____
2) date/time _____	Code _____	6) date/time _____	Code _____
3) date/time _____	Code _____	7) date/time _____	Code _____
4) date/time _____	Code _____	8) date/time _____	Code _____

### INTERVIEW APPOINTMENT DATE/TIME/LOCATION: (Use 2 and 3 only if respondent asks to change original appointment, circle interview location.)

1) MONTH/DAY/TIME (originally set)	2) MONTH/DAY/TIME (first change)	3) MONTH/DAY/TIME (second change)
Respondent's Home Tribal Center Other _____	Respondent's Home Tribal Center Other _____	Respondent's Home Tribal Center Other _____

2) How many people reside in your household? \_\_\_\_\_

Notes: \_\_\_\_\_

### INTERVIEW RESULT CODES: (Complete this section by circling the appropriate code.)

1. Completed interview at home.
2. Completed interview at Tribal Center or other location.
3. Not at home at time of visit; need to re-schedule.
4. Missed appointment at Tribal Center or location; need to re-schedule.
5. Moved within survey area; need to re-schedule.
6. Moved out of survey area, or no current address.
7. Total refusal to participate. Reason: ☐ Does not consume fish or seafood ☐ Other: \_\_\_\_\_
8. Refusal to participate stated at beginning of the interview by respondent or other family member.
9. Interview not completed. Reason: \_\_\_\_\_

INTERVIEWER'S Name \_\_\_\_\_

## Wampanoag Tribe Fish & Shellfish Consumption Survey

### INTRODUCTION

*Interviewer: Please read as stated below without additions or deletions the information provided to the respondent. It is important that the respondents understand the purpose of the survey, how their answers will be used and how we will protect confidentiality.*

Hello, my name is \_\_\_\_\_, and I represent the Wampanoag Tribe of Gay Head (Aquinnah). We appreciate your willingness to participate in our fish and shellfish consumption survey.

As mentioned in the letter about the Survey project we sent you, the information given in response to this questionnaire will help the Wampanoag Tribe of Gay Head to understand the rates of fish and shellfish consumption, how fish and shellfish are prepared and cooked, the species or types of freshwater and saltwater fish and shellfish regularly consumed and the locations where they are harvested and/or purchased.

All of the personal identification information, which you provide to us during the interview, is confidential. The information you share will be used by the Tribe's Natural Resources Department and the Health Department and will be entered into a special database shared between these two departments. Your responses to the questions will be combined with those of others so that your answers cannot be identified. No personal identifiers will be used. The household and individual members that provide answers to the questionnaire are identified by a number system. Once the survey is complete, there will be a report completed summarizing the results. All participating households of the Tribe will be sent a copy of this report. In the meantime, if you have any questions, you are welcome to call the Natural Resources Department. Here is our card and the Project Coordinator, Jeff Day, his phone number at the Tribal Center is 508 645-9265 ext 161.

The interview will take about one hour. It is in four sections. In Section One, I have noted the date and time and location of this interview. In Section Two, I will ask you to tell me whether each person in your household eats fish and shellfish, how often and how much is eaten as a meal. In Section Three I will ask about particular types of fish and shellfish you eat and where you purchased and/or harvested in the past year. Section Four will focus on how you prepare and cook fish and shellfish meals. Finally, I'll ask for some general background information.

Date of Interview \_\_\_\_\_ Time Interview Begins \_\_\_\_\_ AM  
\_\_\_\_\_ PM

## Wampanoag Tribe Fish & Shellfish Consumption Survey

### SECTION 2: FISH CONSUMPTION-FREQUENCY AND PORTIONS

- 1.) Do you prepare most of the fish meals at this residence? ☐ Yes ☐ No
- 2.) How many people reside in your household? \_\_\_\_\_
- 3.) Please provide me with gender and age of everyone in your household. Begin with your age and gender. (use table below)

#### INTERVIEWER NOTE:

*Fill in the table below, FOR EACH HOUSEHOLD MEMBER. The fish and shellfish questions are to be answered in a general way. Explain that you will be asking more specific fish consumption questions later in the survey. NOTE R = RESPONDENT. You will need to keep track of each individual's response for follow-up questions #4, 5, and 6.*

ID	Gender	Age	Is person a Wampanoag Tribal Member?	Does the person live in household at least 50% of year?	Does the person eat fish?	Does the person eat shellfish?	How often does the person eat fish or shellfish?		What is the portion size at each meal?	
							Before Survey?	After Survey?	6 oz	6 oz +
R	M--F		Y--N	Y--N	Y--N	Y--N				
2	M--F		Y--N	Y--N	Y--N	Y--N				
3	M--F		Y--N	Y--N	Y--N	Y--N				
4	M--F		Y--N	Y--N	Y--N	Y--N				
5	M--F		Y--N	Y--N	Y--N	Y--N				
6	M--F		Y--N	Y--N	Y--N	Y--N				
7	M--F		Y--N	Y--N	Y--N	Y--N				

**INTERVIEWER NOTE:** *It may be helpful to always try an record where person 2 corresponds to the respondent's spouse or partner. If the person does not have a spouse or partner, then the next oldest person (perhaps a grandparent who resides in the household). Otherwise, begin recording the children of the household in chronological order (oldest child first, etc.).*

#### CODES FOR PORTION SIZES:

6 oz = Equal to or less than the size of a can of tuna or the palm of your hand with fingers extended.  
 6 oz + = More than a size of can of tuna or the palm of your hand with fingers extended.

#### CODES FOR FREQUENCY:

1=everyday    2=at least once a week    3=at least every 2 weeks    4=at least once a month  
 5=at least once a season (up to 4 times)    6=not at all

**INTERVIEWER:** *Here is additional script to assist you.*

## Wampanoag Tribe Fish & Shellfish Consumption Survey

I would like you to think about your fish consumption for the past year (the past 12 months). I am going to ask a series of questions (in the form of a table) about the type, the amount, and the frequency with which each person in your household eats fish & shellfish.

I have some picture models to help identify the types of fish & shellfish you might eat as well as pictures to help you determine the portions eaten by you and each of your family members. I will also be asking you questions about where you obtain the fish & shellfish that you and your family eat, whether or not it was caught locally or purchased in a grocery store, fish market, wholesaler, or eaten as a meal at a restaurant.

### INTERVIEWER NOTE:

*Purchased means that they bought the fish at a grocery store, specialty fish store or fish market, through a wholesaler. It also means eaten as a meal at a restaurant.*

*The following 3 questions are very detailed and contained a great deal of information. Question #4 asks about fresh water fish, question #5 asks about saltwater fish, and question #6 asks about shellfish consumption. It may be a long process, as you will need to review each household person's consumption of each fish specie. It is important to properly track individual responses. Be sure that the person about whom you are recording fish consumption corresponds to the person number assigned in question 3. For instance, R corresponds to the actual person you are interviewing. Person 2 may correspond to the respondent's spouse. It may be best to share the table format with the respondent so that he or she may more accurately answer the questions.*

### CODES FOR ORIGIN OF FISH AND SOURCE OF FISH:

#### ORIGIN OF FISH:

- **Caught** locally, either by self, family member, or friend.
- **Purchased**, either at grocery store, fish market, or as a meal at a restaurant.

#### SOURCE OF FISH (WHERE CAUGHT):

- Gay Head
- Squibnocket
- Menemsha Pond
- Vineyard Haven
- Edgartown
- Nomans Island
- Oak Bluffs
- West Tisbury
- Chilmark
- Don't Know
- Other1
- Other2

## Wampanoag Tribe Fish & Shellfish Consumption Survey

4.) In the past 12 months, what types of the following **fresh water fish** have YOU eaten?

Species	PERSON IDENT #	TYPICAL PORTION SIZE (6 oz ) or (6 oz +)	NUMBER OF PORTIONS PER MEAL (servings)	NUMBER OF MEALS PER YEAR (d/wk/mo/yr)	ORIGIN (Caught or Bought?)	IF LOCAL, SOURCE? (Town or Fishing Spot Where obtained?)	CAUGHT	BOUGHT	BOTH
Trout (brown, rainbow, or brook?)									
Bass (large- or small- mouth?)									
White Perch									
Pickerel									
American Eel									
Bullhead (Catfish)									
Salmon (Fresh water)									
Yellow Perch									
Sucker									
Sunfish Pumpkinseed									



## Wampanoag Tribe Fish & Shellfish Consumption Survey

5.) Over the past 12 months, what types of the following saltwater fish have YOU eaten?

Species	PERSON IDENT #	TYPICAL PORTION SIZE  (6 oz or 6+ oz?)	NUMBER OF PORTION PER MEAL (servings?)	NUMBER OF MEALS PER YEAR (d/wk/mo/yr)	ORIGIN (Caught or Bought?)	IF LOCAL, SOURCE? (Town or Fishing Spot Where obtained?)	CAUGHT	BOUGHT	BOTH
Smelt									
Flounder									
Mackerel									
Bluefish									
Haddock									
Sword- fish									
Cod									
Striped Bass									
Herring									
Halibut									
Tataug									
Porgie									
Scup									

## Wampanoag Tribe Fish & Shellfish Consumption Survey

6.) In the past 12 months, what types of shellfish and shellfish delicacies have YOU eaten?

Species	PERSON IDENT #	TYPICAL PORTION SIZE (6 oz or 6oz+?)	NUMBE R OF PORTIO N PER MEAL Servings	NUMBER OF MEALS PER YEAR (d/wk/mo/yr)	ORIGIN (Friend, relative, store, market, rest.)	IF LOCAL, SOURCE? (Town or Fishing Spot Where obtained?)	CAUGHT	BOUGHT	BOTH
Scallops									
Lobster									
Lobster Tomalley									
Mussels									
Soft-shell Clams (steamers)									
Crab									
Oysters									
Squid (Calamari)									
Shrimp									
Octopus									

## Wampanoag Tribe Fish & Shellfish Consumption Survey

### SECTION 3: SOURCES OF FISH & SHELLFISH AND CONSUMPTION TRENDS

7. If you circled "purchased" to any of the fish and shellfish identified in questions # 4, 5 or 6, please tell me where you or another household member purchased the fish or shellfish on island within the past year?

Name of Establishment	Restaurant or Market?	Location (which town?)	Fall 2001	Win 01/02	Spr 2002	Sum 2002

8. In the past year, have you purchased fish or shellfish from a grocery store, fish market, wholesaler or restaurant off island? ☐ Yes ☐ No ☐ Don't Know

9. If you answered yes to question 8, please tell me where you purchased fish &/or shellfish off island in the past year?

Name of Establishment	Restaurant or Market?	Location (which town?)	Fall 2001	Win 01/02	Spr 2002	Sum 2002

10. In the past year, has anyone in your family caught fish or harvested shellfish **LOCALLY** for personal consumption or for another family's consumption? ☐ Yes ☐ No ☐ Don't Know

## Wampanoag Tribe Fish & Shellfish Consumption Survey

11. Here is a map of the area. Please indicate where you or another member of your household have caught fish in the past year (12 months ago till today), in which season(s) you fish in each of the areas:

Location fish Caught	Fish Species Caught <i>(If none, enter none.)</i>	Fall '01	Winter '01-'02	Spring '02	Summer '02

12. Using the same map, please indicate which specie(s) of shellfish do you catch in each or (or all) of the following seasons:

Location	Shellfish Species Caught	Fall '01	Winter '01-'02	Spring '02	Summer '02

## Wampanoag Tribe Fish & Shellfish Consumption Survey

13a.) Prior to June 2001, did you fish in other areas? ☐ Yes ☐ No ☐ Can't Remember

13b.) If you answered "yes", please indicate where you have fished previously, but no longer do, and in which season(s) you used to fish there:

*If none, enter none.*

Location	The Reason Why You No Longer Fish Here?	Fall '01	Winter '01-'02	Spring '02	Summer '02

Thinking about your family's fish consumption patterns over the last several years, we are interested in how, if at all, your family has changed the way they eat fish.

### INTERVIEWER: Possible probes for changes

*For eating less: less available; less accessible; health reasons; personal reason; family reduction/influence; less time to smoke, can, or preserve fish & shellfish.*

*For eating more: more available/accessible; like seafood more than used to; health reasons; self or family started harvesting fish &/or shellfish; self, family friends take more time to smoke, can, or preserve fish & shellfish.*

14. Do the adults in your family eat more, less, or the same amount of fish & shellfish than they did fifteen years ago?

☐ More ☐ Less ☐ Same ☐ Don't Know

14 a) Reason: \_\_\_\_\_

15. Does your family eat different fish & shellfish than they did fifteen years ago?

☐ Yes ☐ No ☐ Don't Know

16. Which species have been added to the family diet? \_\_\_\_\_

16. a) Reason: \_\_\_\_\_

## Wampanoag Tribe Fish & Shellfish Consumption Survey

17. Which species have been dropped from family diet? \_\_\_\_\_

17. a) Reason: \_\_\_\_\_

17. b) If the reason stated did not exist, how much of those species would you consume annually?  
\_\_\_\_\_

18. Do you or your family members eat fish or shellfish at ceremonies, gatherings, or community events?

☐ Yes      ☐ No      ☐ Don't Know

19. What is your typical portion size at these gatherings for the different groups of species?

Fresh water fish: (6 oz) \_\_\_\_\_ greater than 6 oz \_\_\_\_\_  
 Salt water fish: (6 oz) \_\_\_\_\_ greater than 6 oz \_\_\_\_\_  
 Shellfish: (6 oz) \_\_\_\_\_ greater than 6 oz \_\_\_\_\_

### SECTION 4: PREPARATION METHODS

20. Now I am going ask you about how you commonly prepare and cook the fish &/or shellfish that was caught locally and if you cook the skin or not. I have a table where we can list the species that you and your family commonly eat and I would like you to list the methods you use to cook and prepare these fishmeals.

Fish Specie	Source of Fish or Shellfish (local spot)	Preparation Method	Cooking Method	% time fillets cooked with skin	% time fillets cooked without skin

## Wampanoag Tribe Fish & Shellfish Consumption Survey

21. Please list the weight and height of each person for whom you provided answers:

ID	Height	Weight (lbs)	How long have you lived on MV? (Years and Months)	Where did you live before moving to MV?	How long did you live there?
R	Feet    inches				
2	Feet    inches				
3	Feet    inches				
4	Feet    inches				
5	Feet    inches				
6	Feet    inches				
7	Feet    inches				

22. Have you given live birth in the last five years?    Yes    No

23. How many children have you given birth to in the last five years? (Circle response)

0                      1                      2                      3                      4                      5

24. How many months did you breast-feed each of these children?

           months                                 months                                 months                                 months                                 months  
 (Child 1)                              (Child 2)                              (Child 3)                              (Child 4)                              (Child 5)

25. Would you be willing to participate in a further detailed study?                      ☐ Yes                      ☐ No

**THANK YOU FOR SHARING WITH US THE INFORMATION COLLECTED IN THE SURVEY. THIS SURVEY WILL HELP THE DEPARTMENT FULLFILL ITS GOALS TO PROTECT THE ENVIRONMENT AND WELL-BEING OF TRIBAL MEMBERS.**

We would appreciate your signing this form that verifies that the interview was conducted.  
*(INTERVIEWER: HAND THE RESPONDENT THE SURVEY AND HAVE THE PERSON SIGN THE LINE BELOW. THEN HAND THE ENVELOPE TO THE RESPONDENT IN ORDER TO PLACE THE SURVEY INTO THE ENVELOPE.)*

Signature: \_\_\_\_\_

## Wampanoag Tribe Fish & Shellfish Consumption Survey

### INTERVIEWER NOTES:

26. The respondent's cooperation was: (*circle one*)

1=very good

2=good

3=fair

4=poor

27. The reliability of the respondent's answers was: (*circle one*)

1=highly reliable

2=generally reliable

3=questionable

4=unreliable

28. If the reliability of the respondent's answers was questionable or unreliable, what do you think were the main reasons?

29. Please use the space below to enter notations and any remarks you might want to make about other aspects of the interview.



## **Attachment C**

### **Sample Data Base**

HRC has included examples of two sample databases with data entry forms. One (guidance.mbd) is a very simple application for tracking the comments of student meetings (with information such as date, time, and comments). It produces one simple report. It is an example of a "no-frills", limited data entry application. It is a stand-alone application and simple to look at.

HRC made the effort to view the data entry process used in the Mercury Fish Consumption Survey project undertaken by the Northeast States for Corrective Air Management (NESCAUM). While they used ACCESS as their database, their data entry process consisted of entering data straight off the questionnaire. While this approach can save money, there are drawbacks to its use depending on the training of those entering the data as well as how much data is to be entered.

---

## Section 1: Survey/Activity Log

Date Contacted to Establish Interview

1. Date	05/02/2002	Time		Code	
2. Date	05/03/2002	Time		Code	
3. Date		Time		Code	
4. Date		Time		Code	

InterviewID:

3

5. Date		Time		Cc
6. Date		Time		Cc
7. Date		Time		Cc
8. Date		Time		Cc

Interview appointment Date/Time/Location

(Use 2 and 3 only if respondent asks to change original appointment)

1. Date		Time		Location	
2. Date		Time		Location	
3. Date		Time		Location	

Interview Result Code

Interview not completed.

Code 9 - Reason

Interviewer's Initials

Edited Date

Edited By

Keyed Date

Keyed By

Verified Date

Verified By

Note Space for Editor

Interview Date

Interview Time



## Section 1: Survey/Activity Log

Date Contacted to Establish Interview

1. Date	05/02/2002	Time		Code	
2. Date		Time		Code	
3. Date		Time		Code	
4. Date		Time		Code	

InterviewID:

4

5. Date		Time		Cc
6. Date		Time		Cc
7. Date		Time		Cc
8. Date		Time		Cc

Interview appointment Date/Time/Location

(Use 2 and 3 only if respondent asks to change original appointment)

1. Date		Time		Location	
2. Date		Time		Location	

3. Date  Time  Location

Interview Result Code

Code 9 - Reason

Interviewer's  
Initials

Edited Date

Edited By

Keyed Date

Keyed By

Verified Date

Verified By

Note Space for Editor

Interview Date

Interview Time



## Section 1: Survey/Activity Log

Date Contacted to Establish Interview

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InterviewID:

5. Date	<input type="text"/>	Time	<input type="text"/>	Cc
6. Date	<input type="text"/>	Time	<input type="text"/>	Cc
7. Date	<input type="text"/>	Time	<input type="text"/>	Cc
8. Date	<input type="text"/>	Time	<input type="text"/>	Cc

Interview appointment Date/Time/Location

(Use 2 and 3 only if respondent asks to change original appointment)

1. Date	<input type="text"/>	Time	<input type="text"/>	Location	<input type="text"/>
2. Date	<input type="text"/>	Time	<input type="text"/>	Location	<input type="text"/>
3. Date	<input type="text"/>	Time	<input type="text"/>	Location	<input type="text"/>

Interview Result Code

Code 9 - Reason

Interviewer's  
Initials

Edited Date

Edited By

Keyed Date

Keyed By

Verified Date

Verified By

Note Space for Editor

Interview Date

Interview Time

Next

## Section 1: Survey/Activity Log

Date Contacted to Establish Interview

1. Date	<input type="text"/>	Time	<input type="text"/>	Code	<input type="text"/>
2. Date	<input type="text"/>	Time	<input type="text"/>	Code	<input type="text"/>
3. Date	<input type="text"/>	Time	<input type="text"/>	Code	<input type="text"/>
4. Date	<input type="text"/>	Time	<input type="text"/>	Code	<input type="text"/>

InterviewID:

6

5. Date	<input type="text"/>	Time	<input type="text"/>	Cc
6. Date	<input type="text"/>	Time	<input type="text"/>	Cc
7. Date	<input type="text"/>	Time	<input type="text"/>	Cc
8. Date	<input type="text"/>	Time	<input type="text"/>	Cc

Interview appointment Date/Time/Location

(Use 2 and 3 only if respondent asks to change original appointment)

1. Date	<input type="text"/>	Time	<input type="text"/>	Location	<input type="text"/>
2. Date	<input type="text"/>	Time	<input type="text"/>	Location	<input type="text"/>
3. Date	<input type="text"/>	Time	<input type="text"/>	Location	<input type="text"/>

Interview Result Code

Code 9 - Reason

Interviewer's  
Initials

Edited Date

Edited By

Keyed Date

Keyed By

Verified Date

Verified By

Note Space for Editor

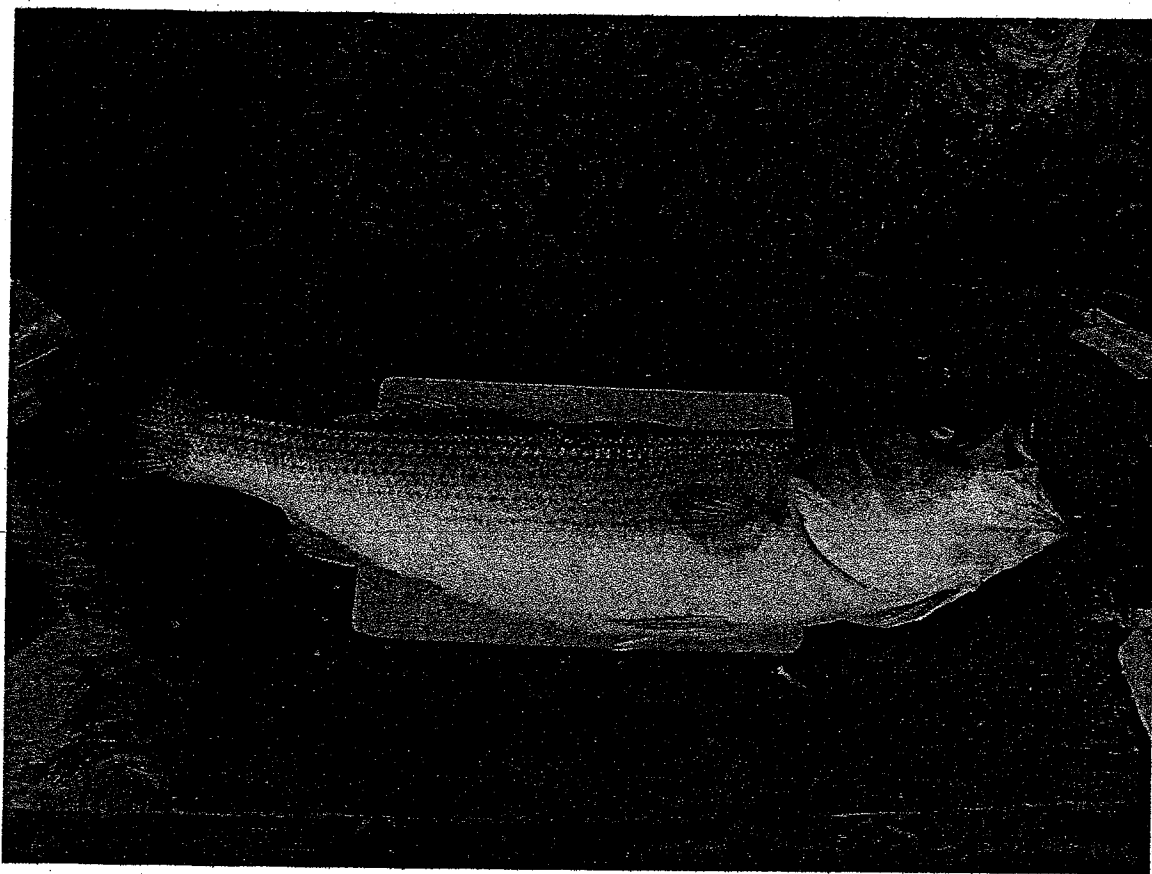
Interview Date

Interview Time

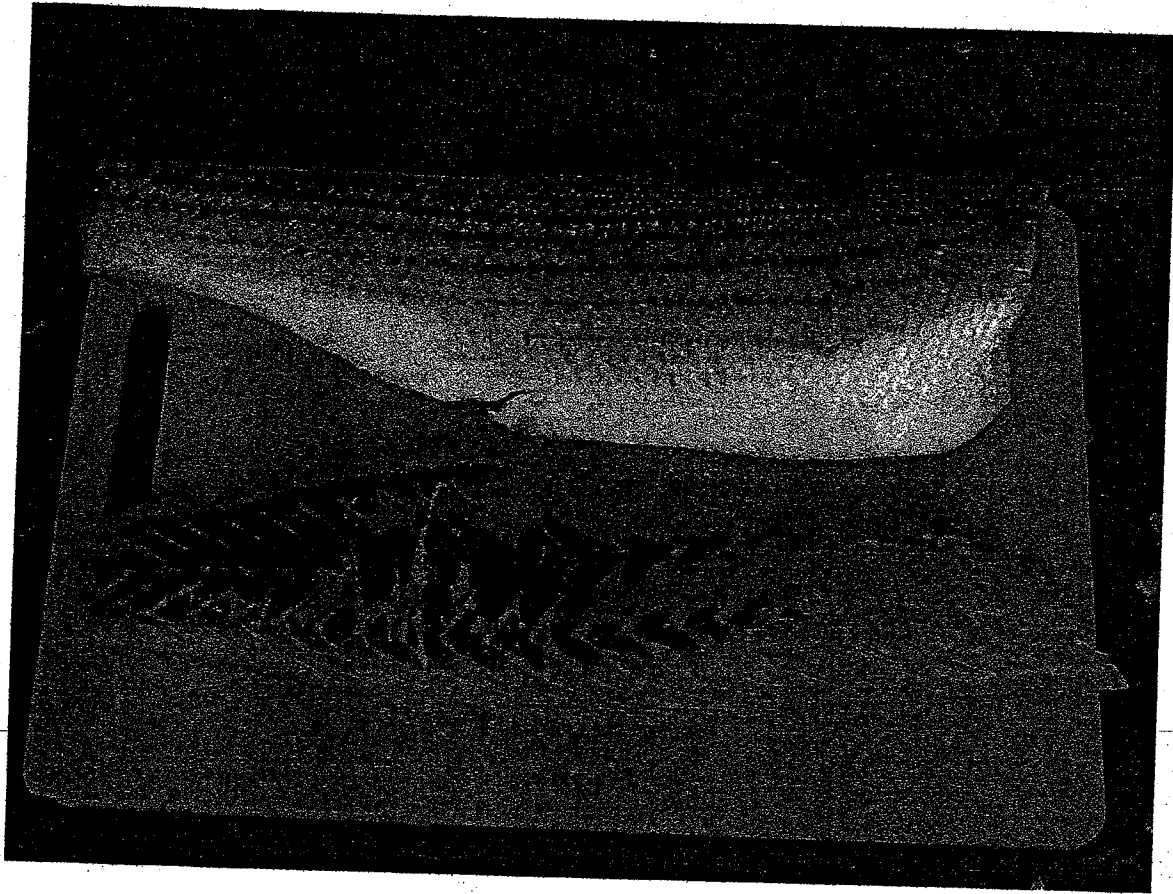
Next

## **Attachment D**

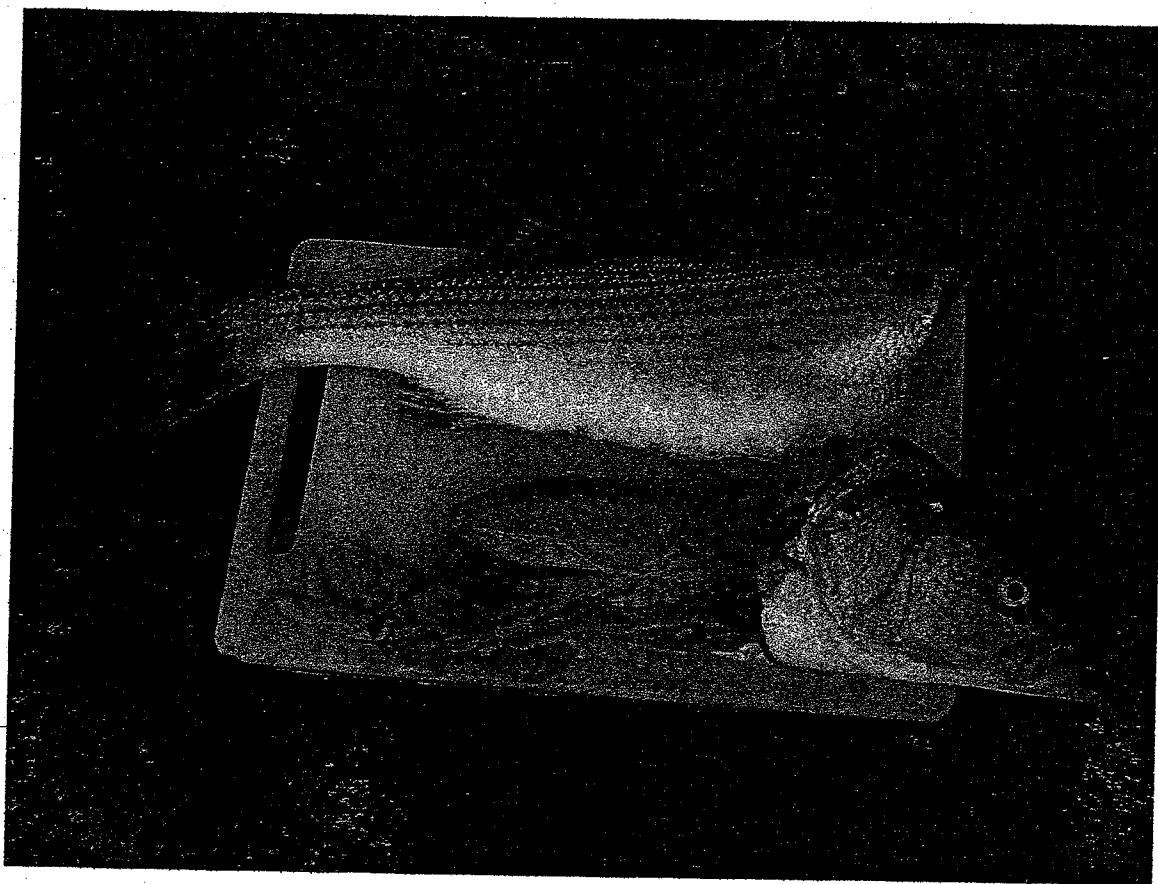
### **FISH PREPARATION STYLES**



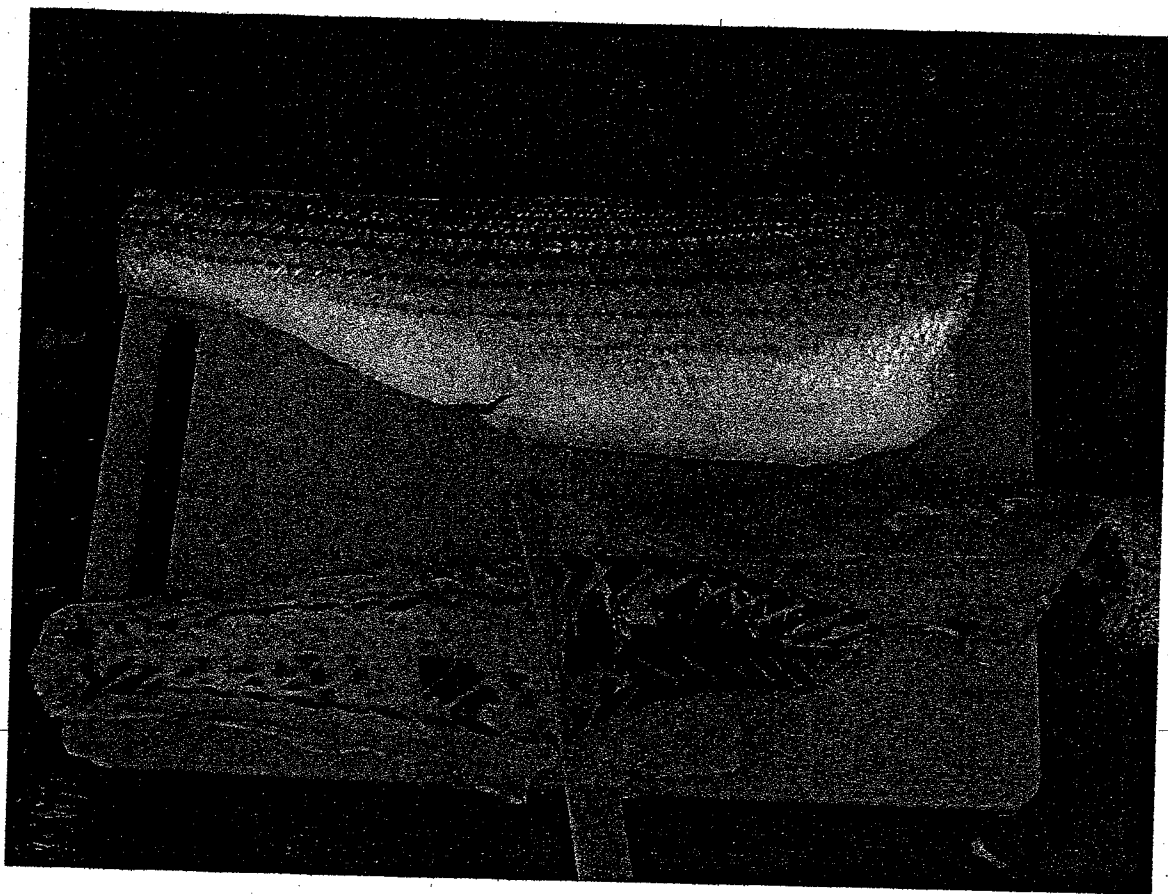
**30" Striped Bass whole**



**(lower) Skinless Filet**  
**(above) Skin on Filet, no fins or head, tail, & no guts**



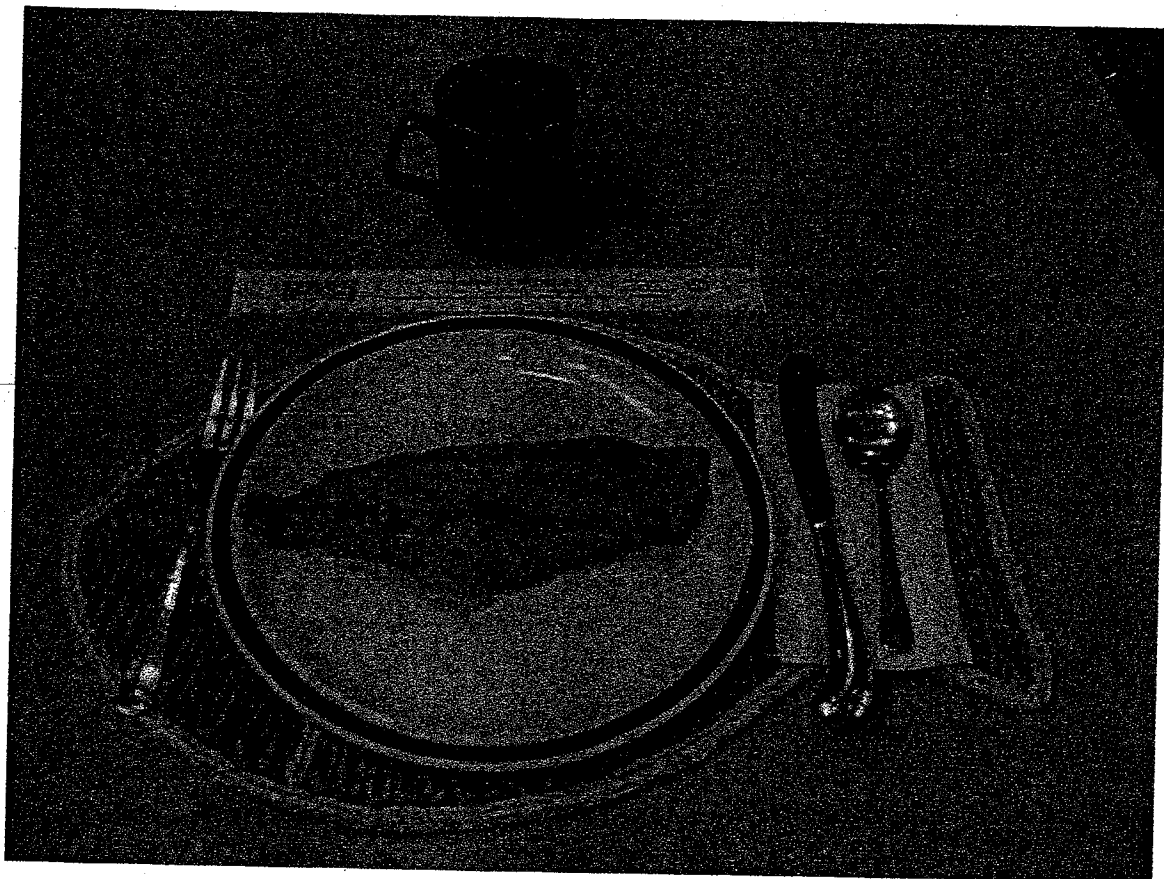
**Striped Bass with guts and head taken out.**



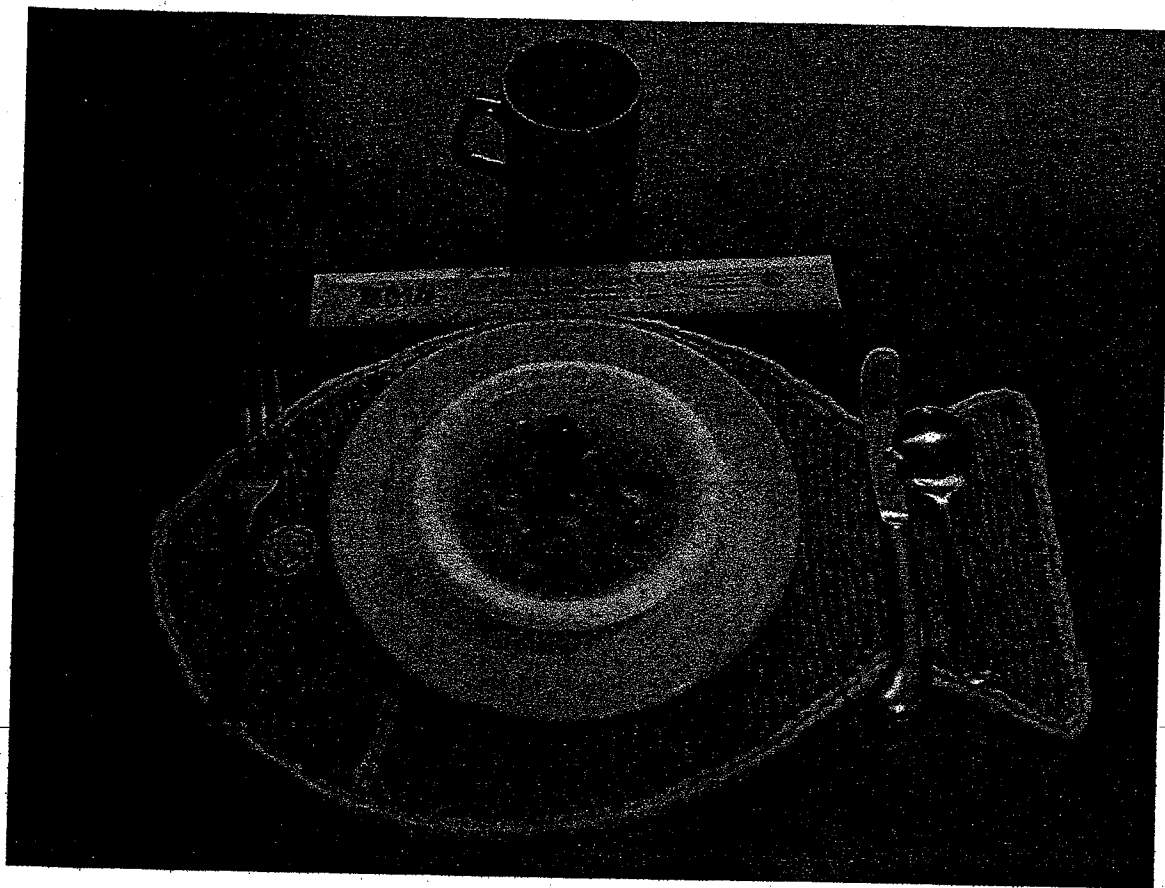
**Bass with skin (above) and with skin being removed (bottom)**



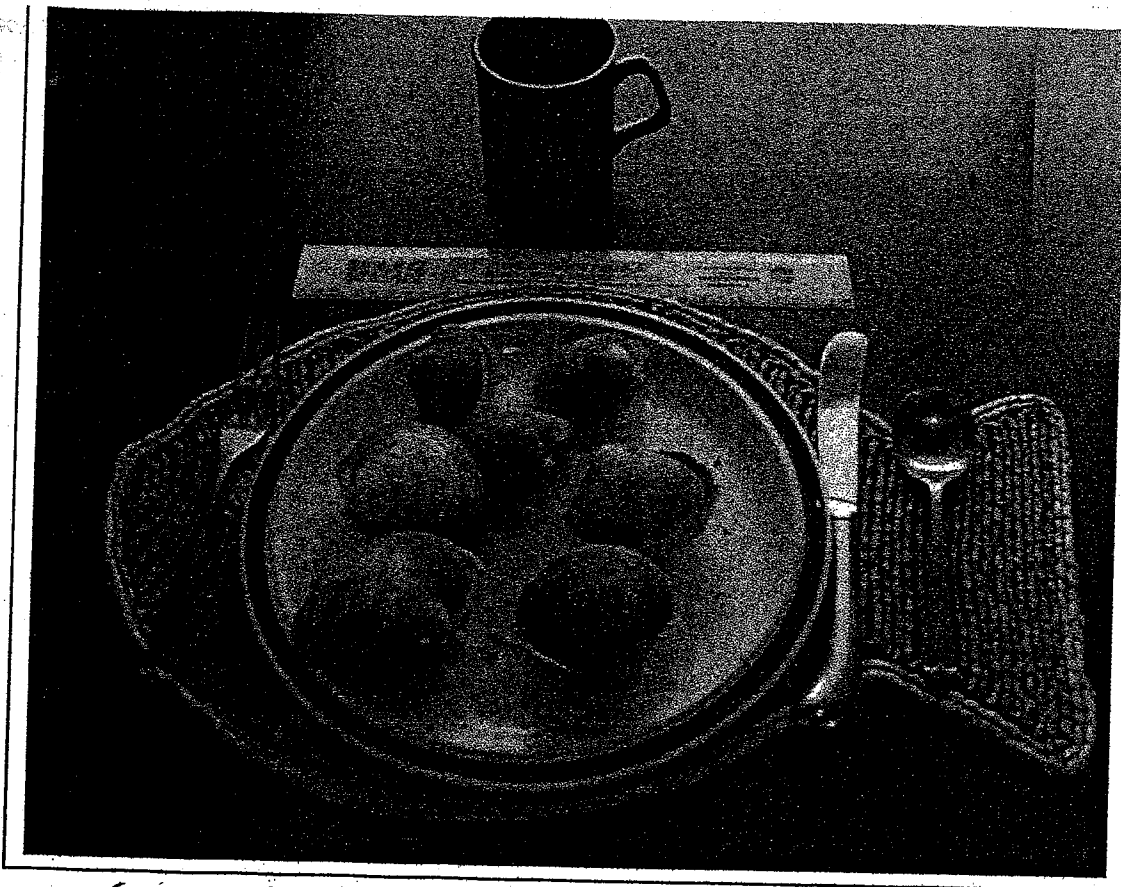
**Attachment E**  
**PHOTOGRAPHS OF MEAL PORTION SIZES**  
**170 Grams = 6 oz**



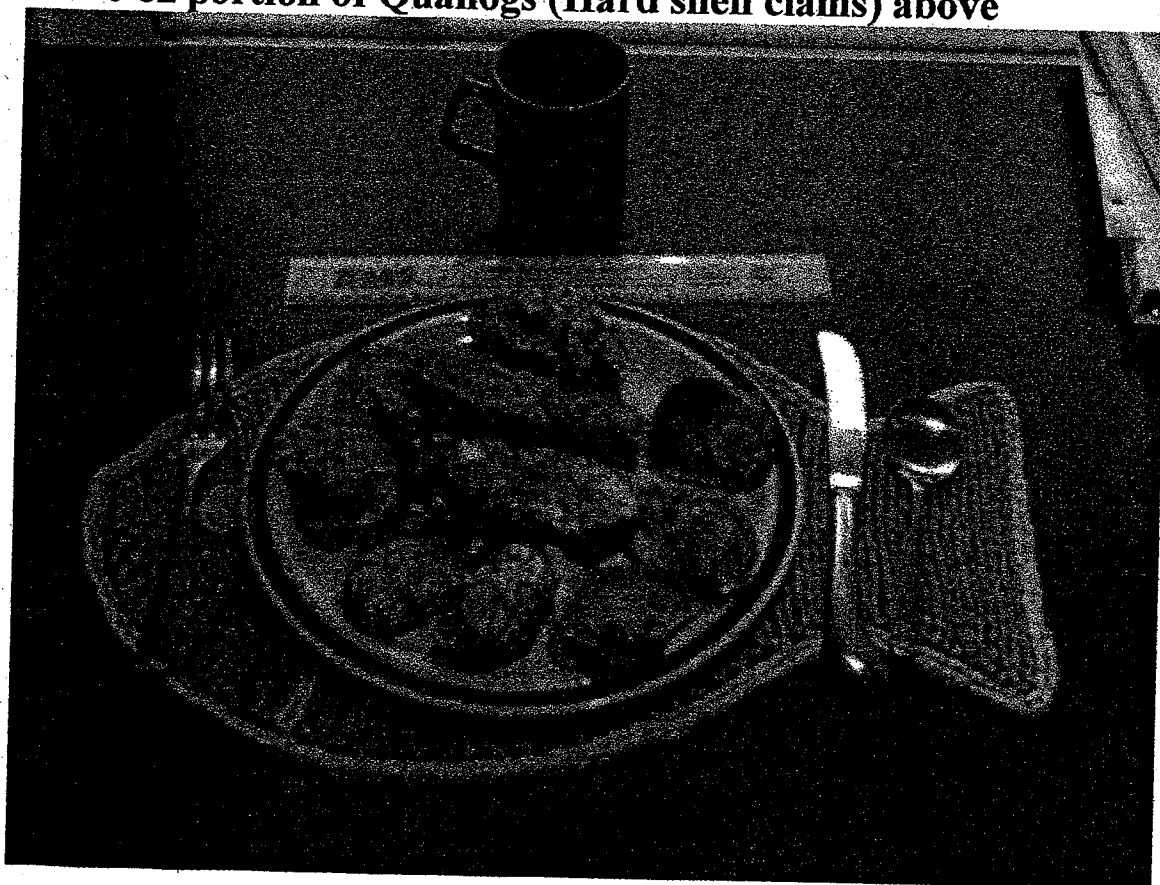
**6 oz portion of Blue Fish Filet**



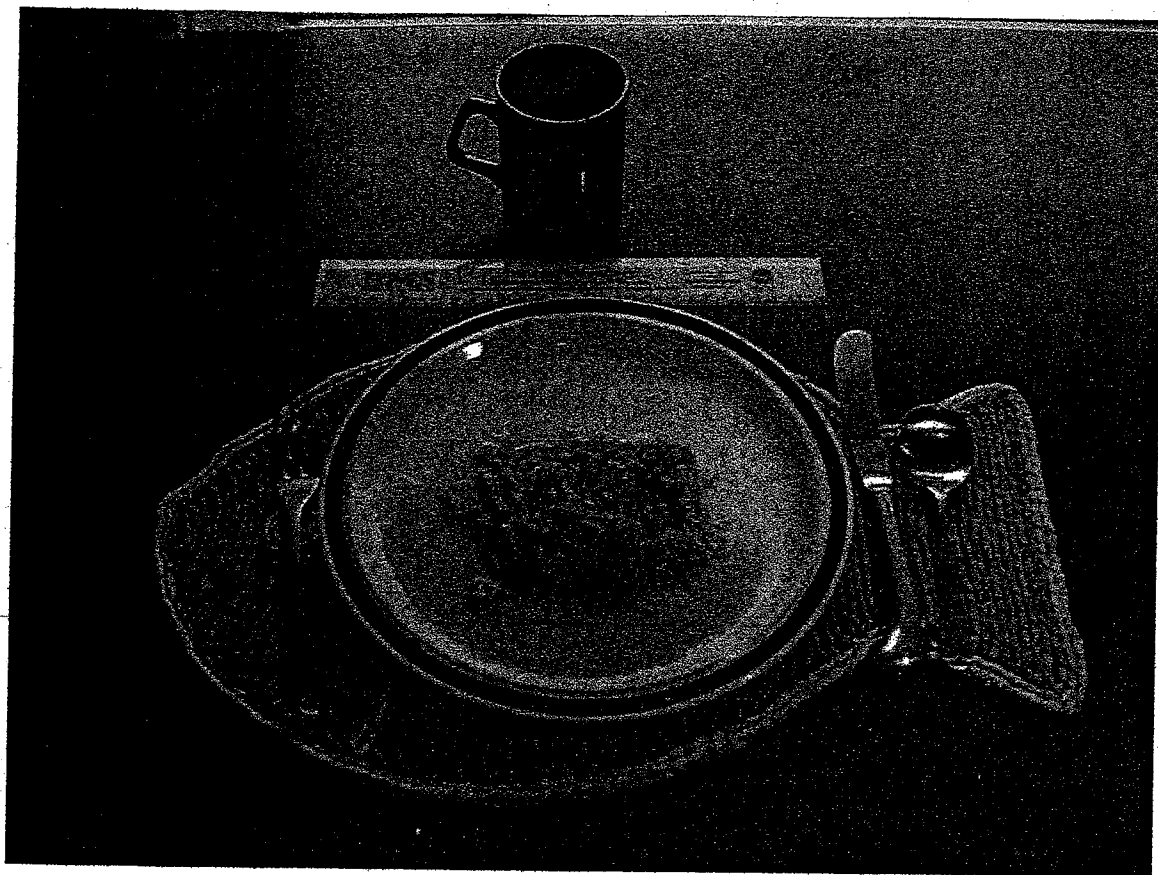
**6 oz Portion of Soft-Shell Clams, Shucked**



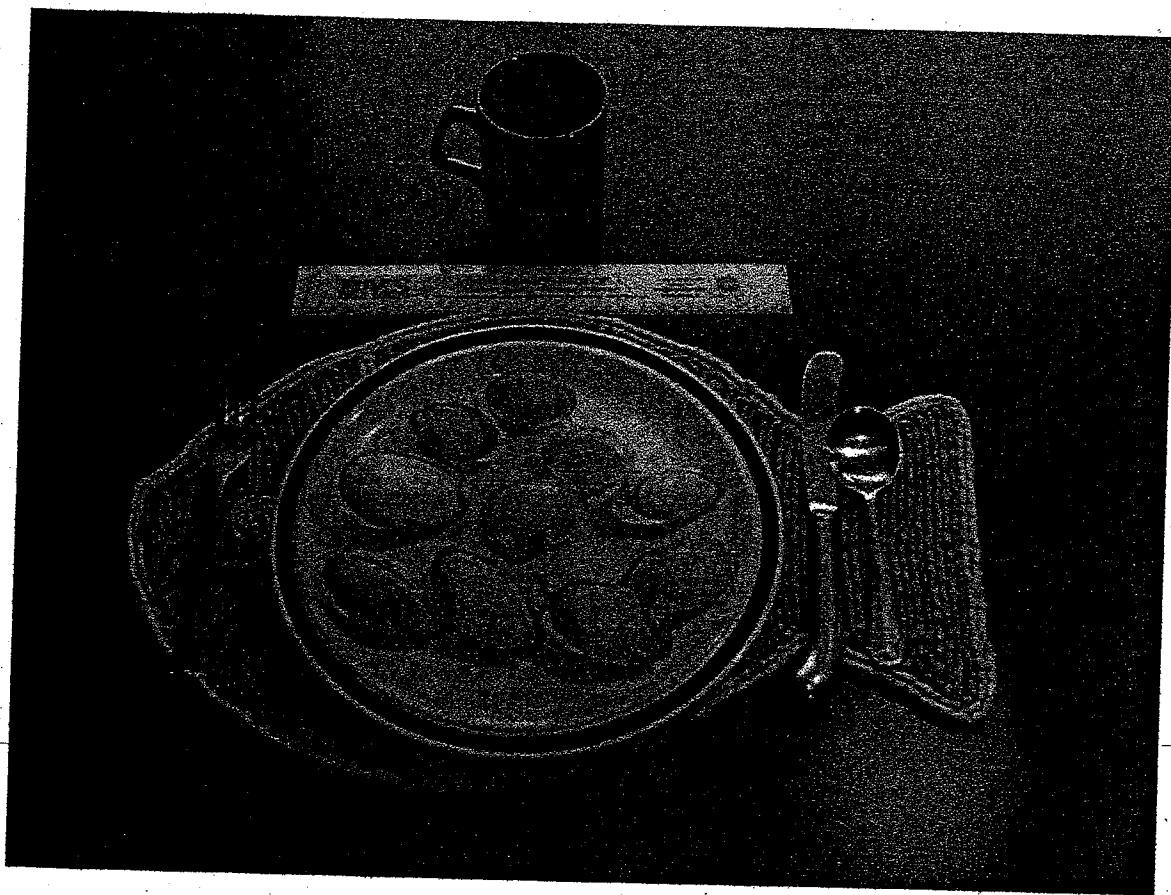
**6 oz portion of Quahogs (Hard shell clams) above**



**6 oz portion of Oysters**



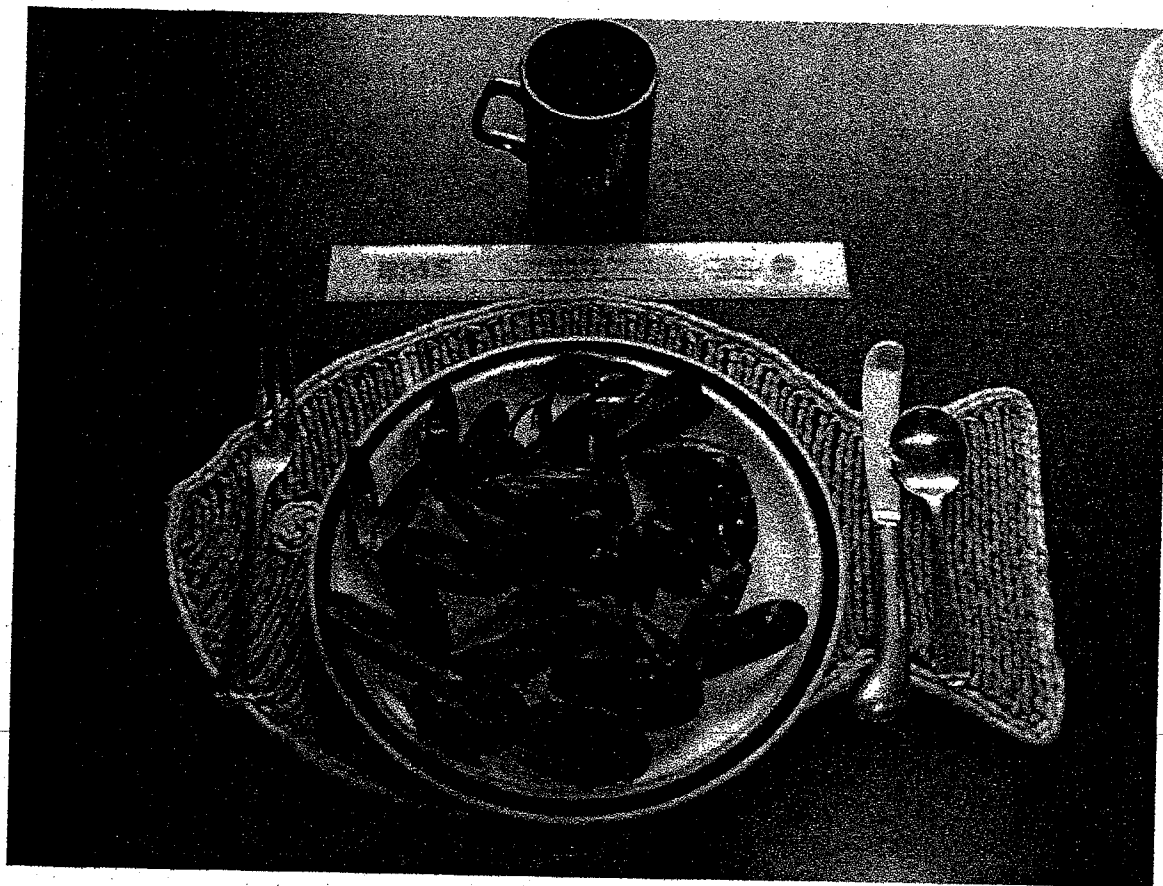
**Contents of 6 oz Can of Tuna**



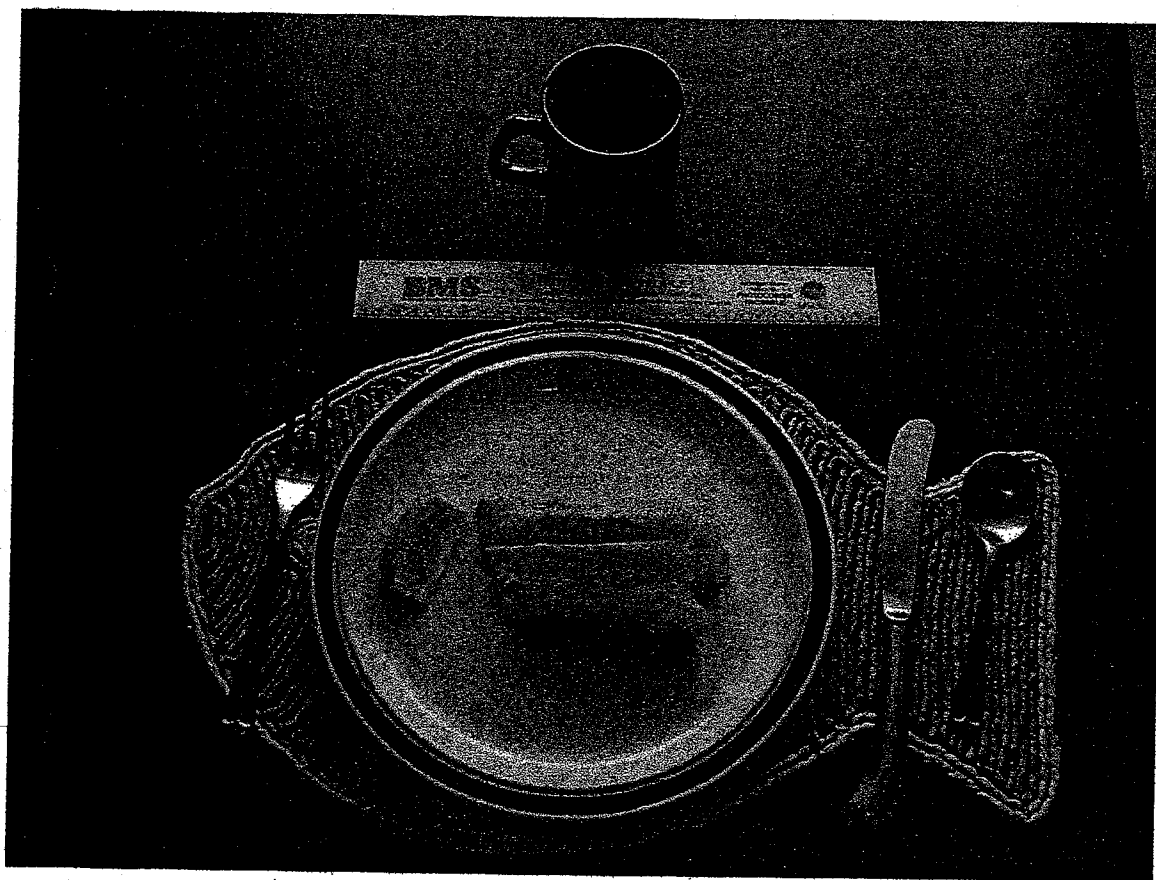
**6 oz Portion of Soft Shell Calms**



**6 oz can of Tuna**

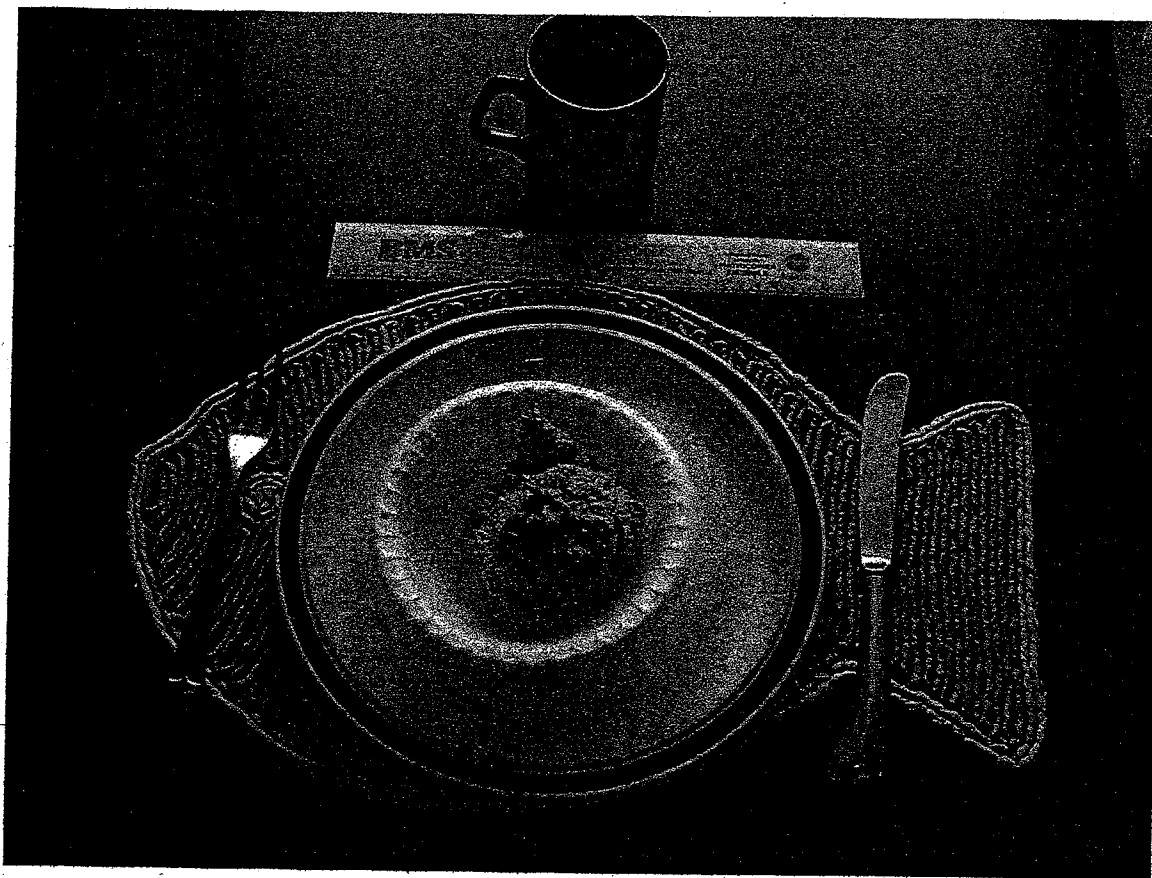


**Blue Mussels 6 oz portion**

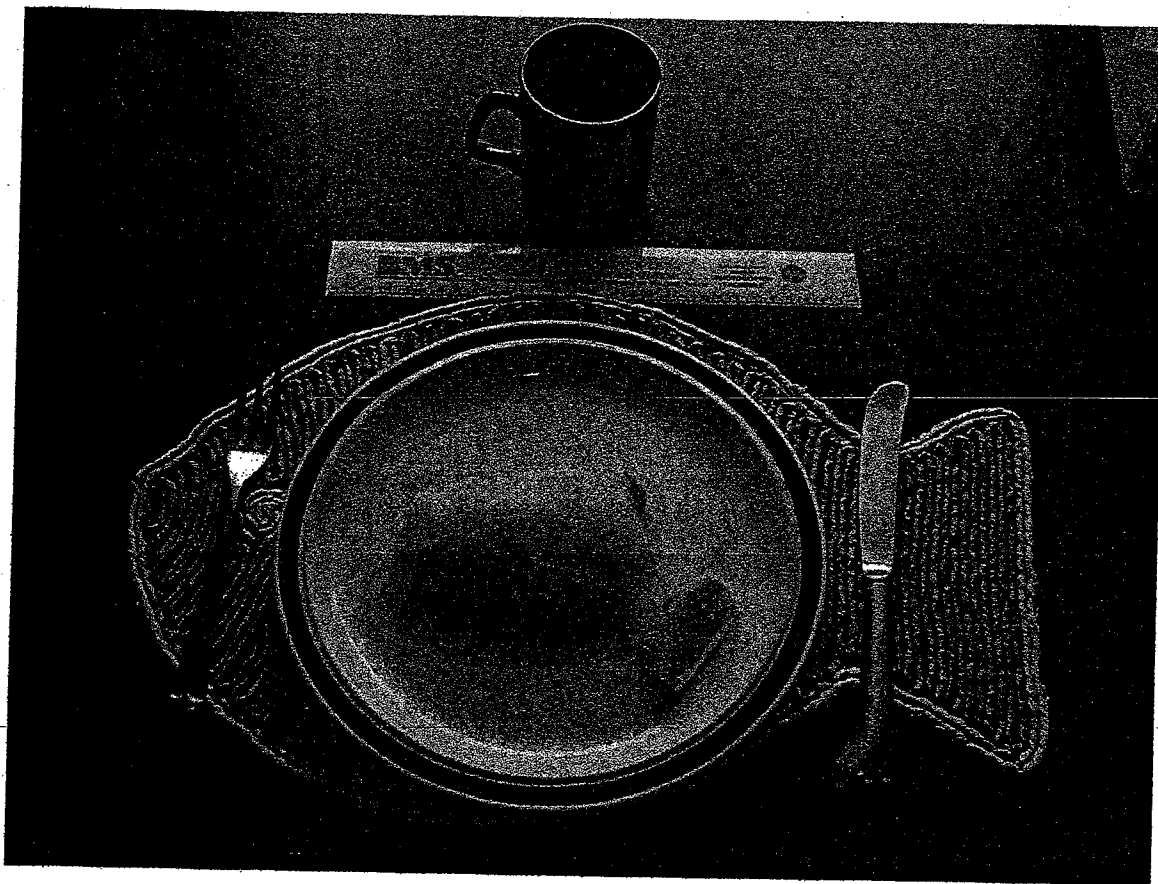


**STRIPED BASS 6oz Filet**

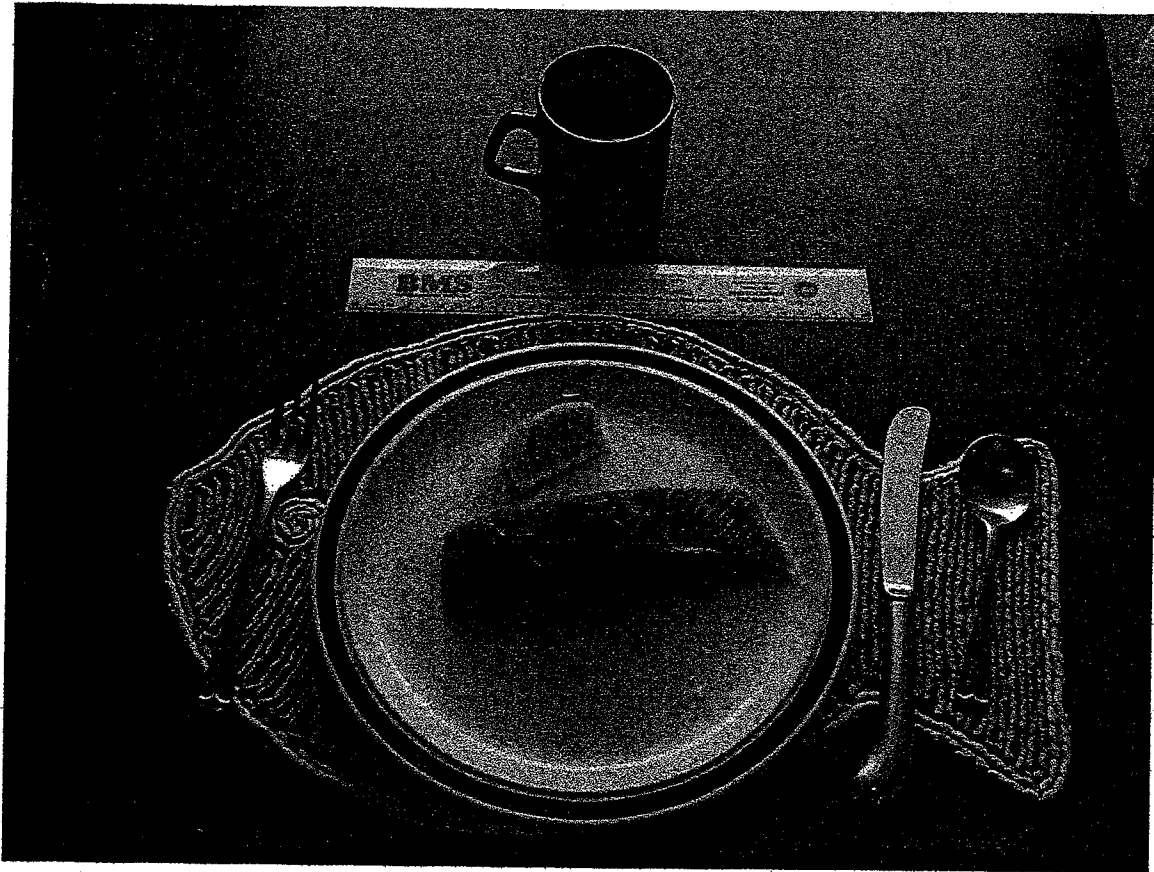




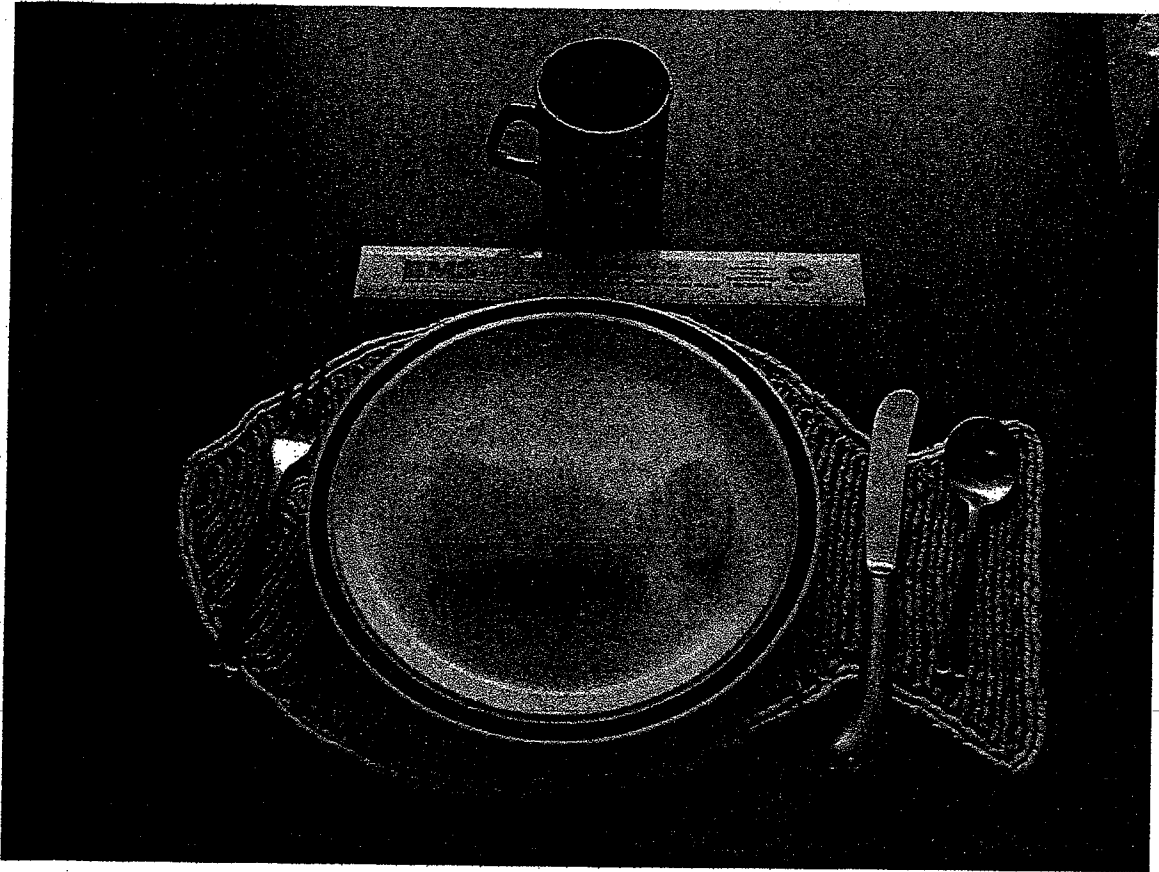
**TUNA PATE 6oz portion**



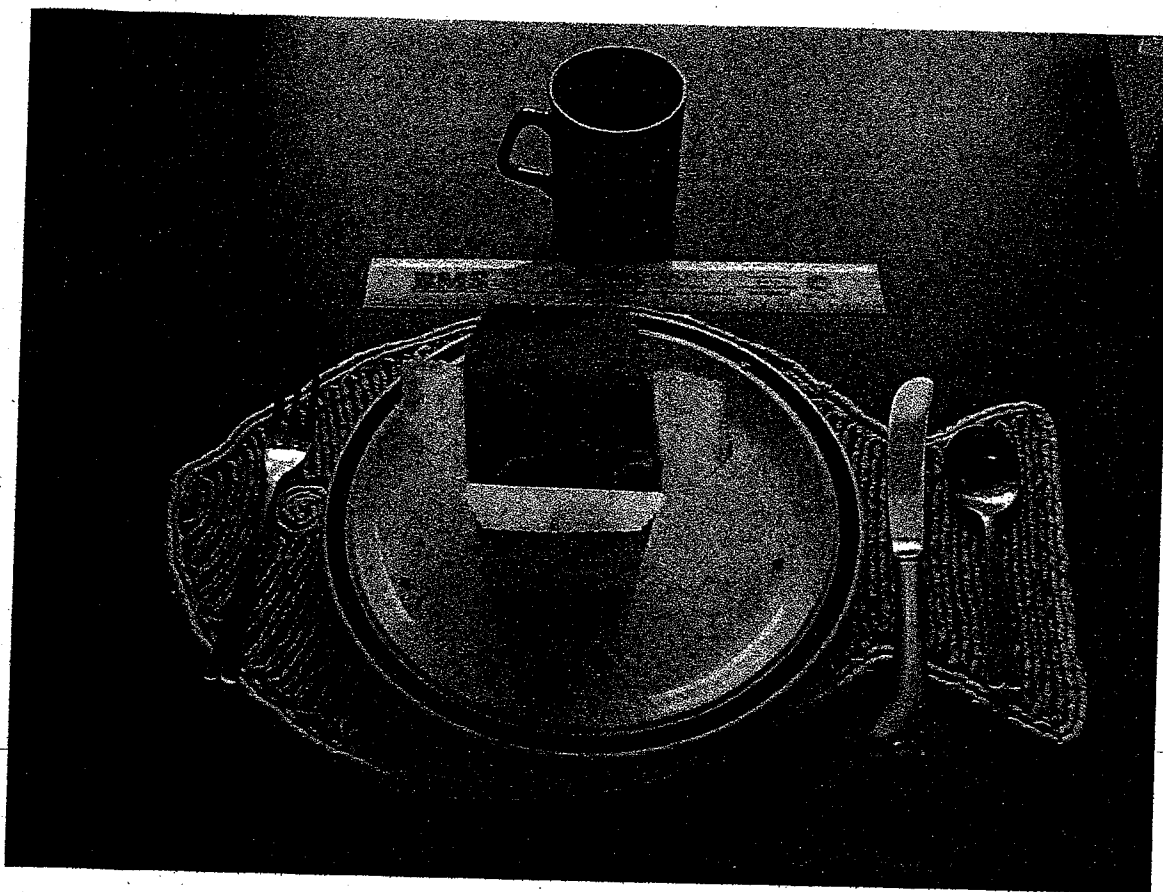
**Halibut 6 oz Filet**



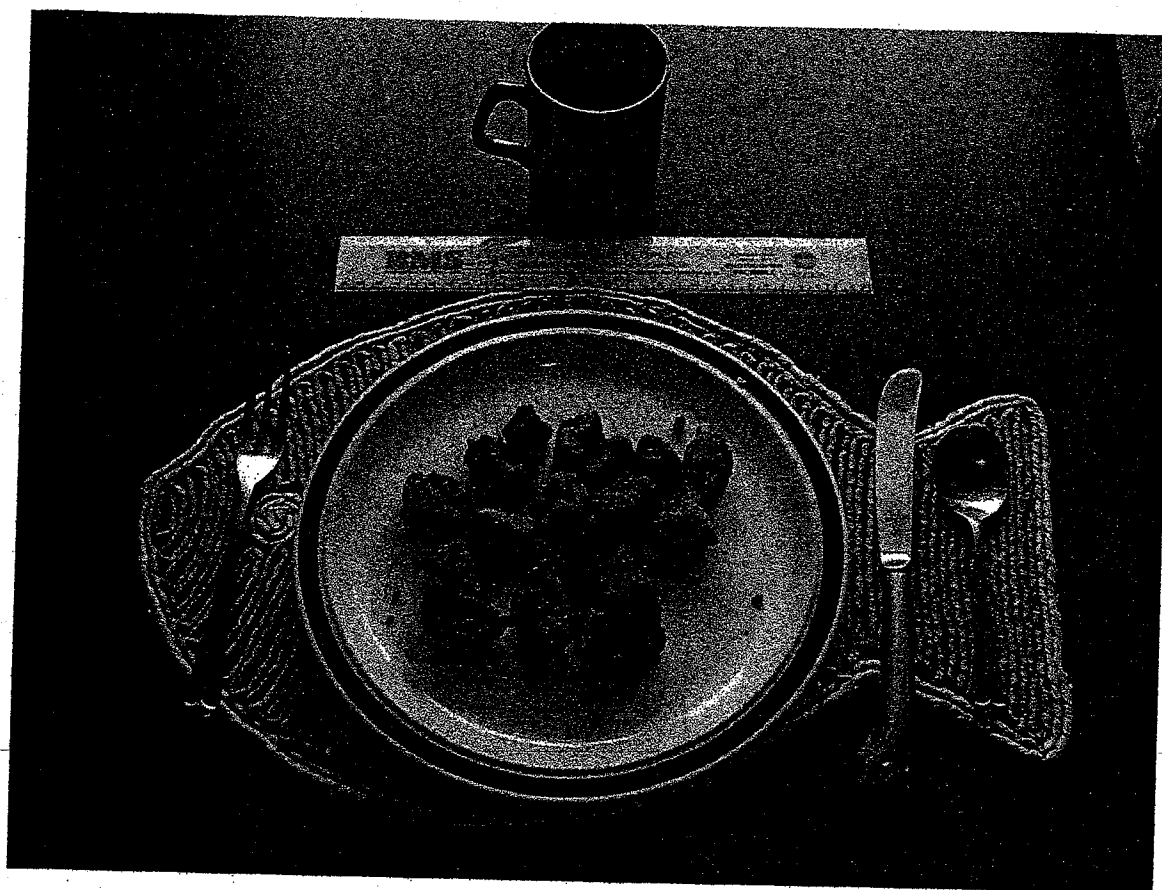
**Salmon 6 oz filet**



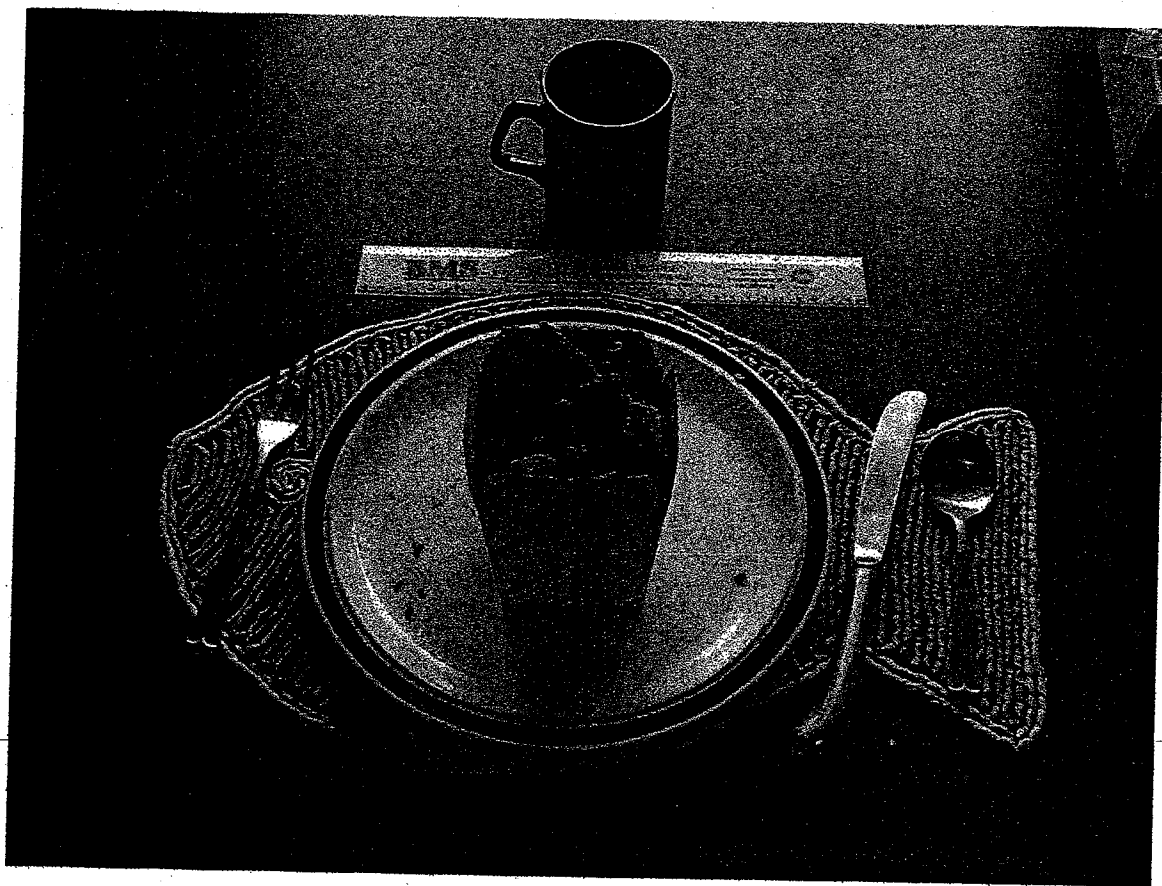
**COD 6 oz filet**



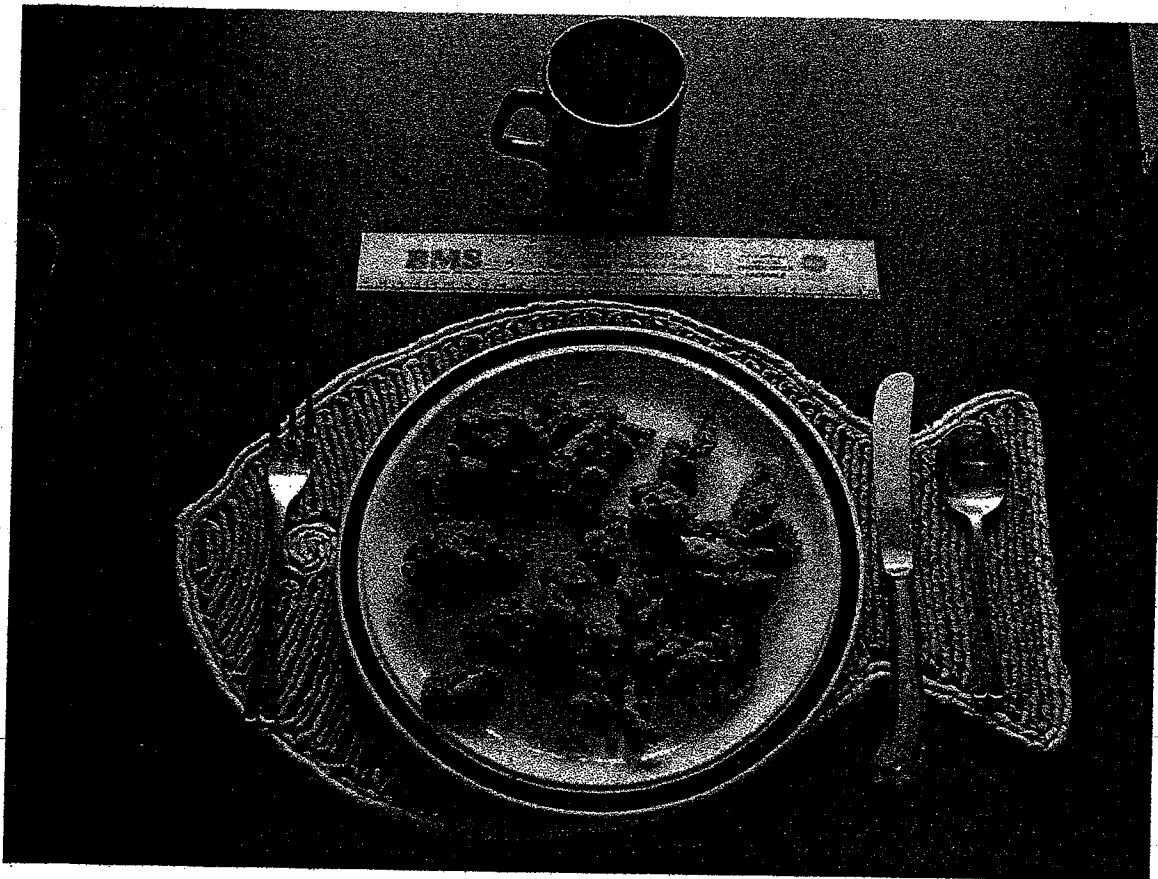
**FRIED SCALLOPS 6oz Portion**



**Fried Scallop 6 oz Portion on Plate**

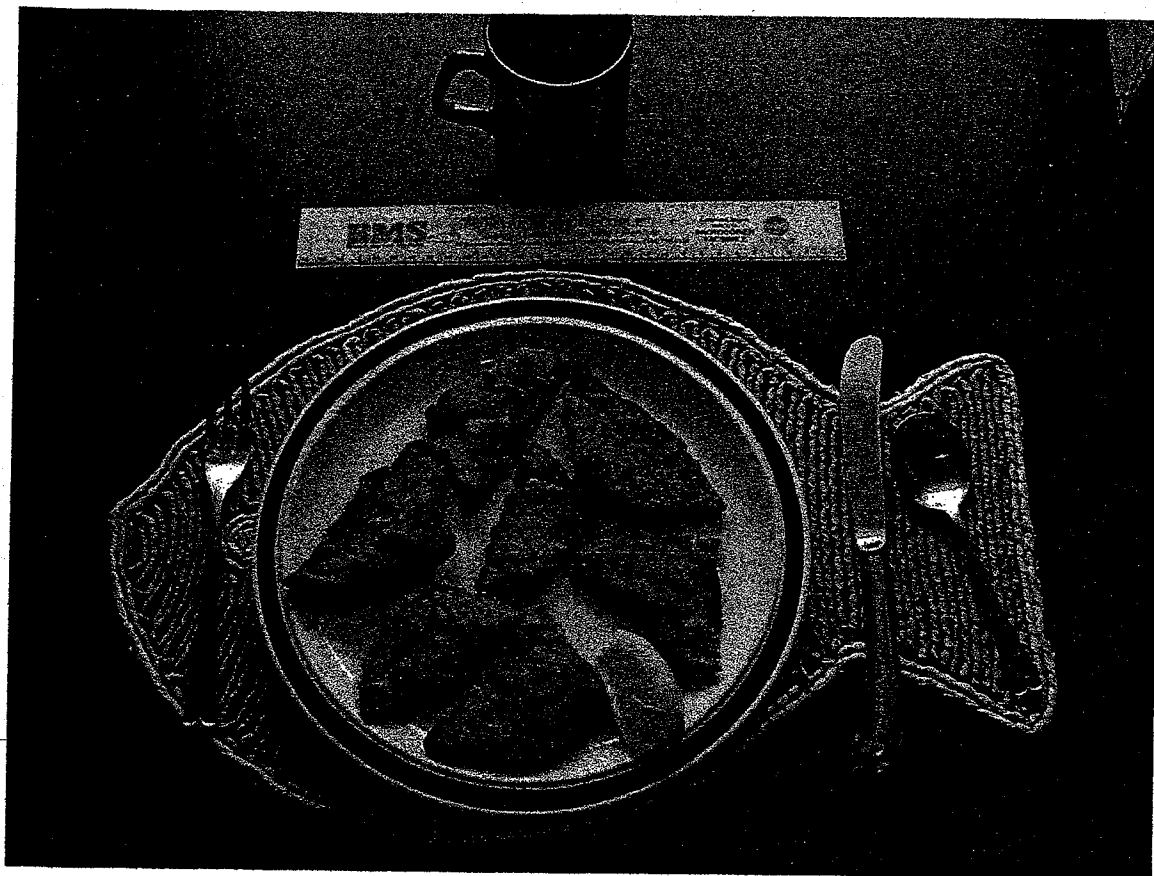


**Fried Soft Shell Clams 6 oz Portion**



**Fried Soft Shell Clam 6 oz portion**

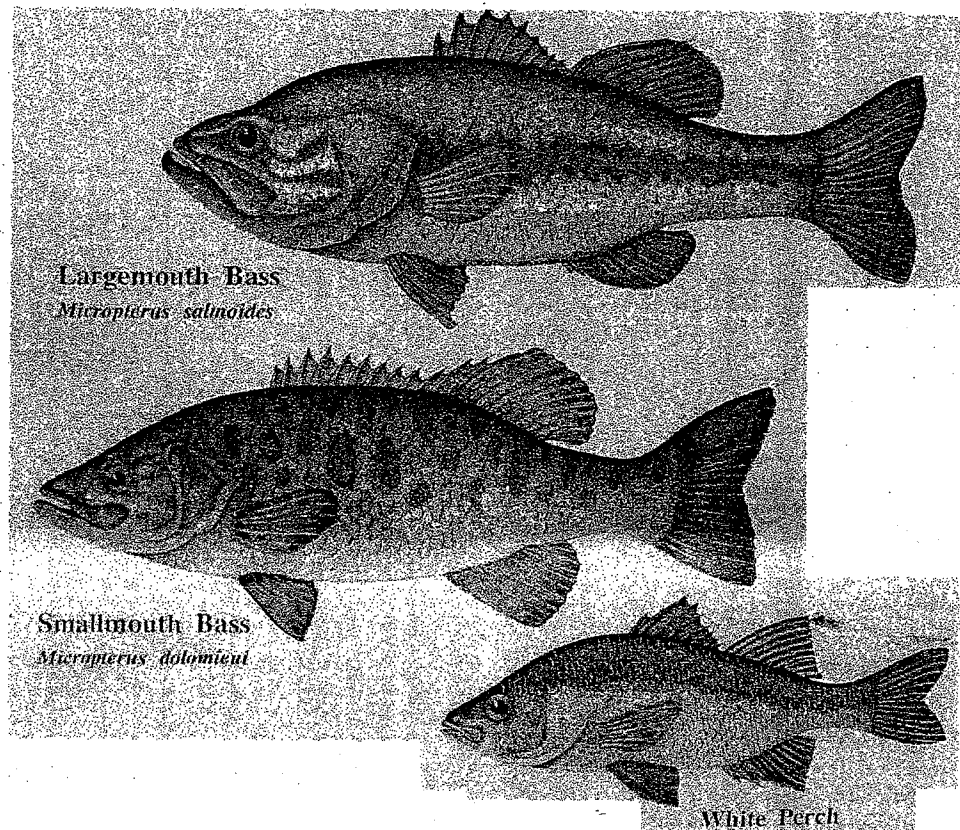
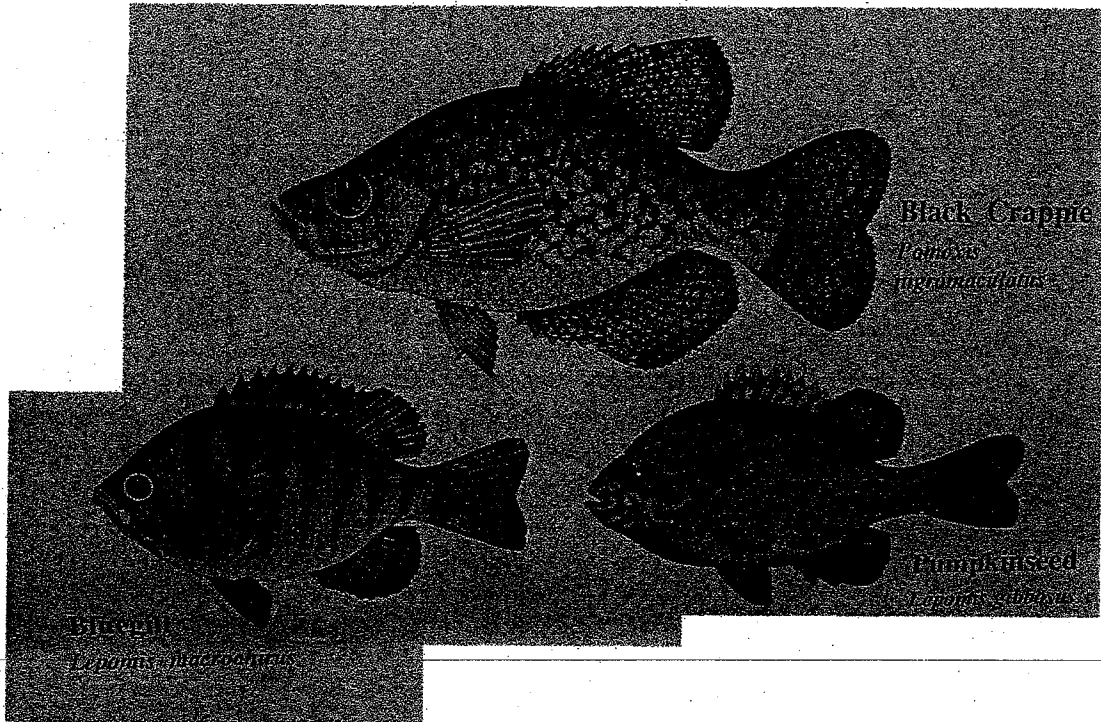


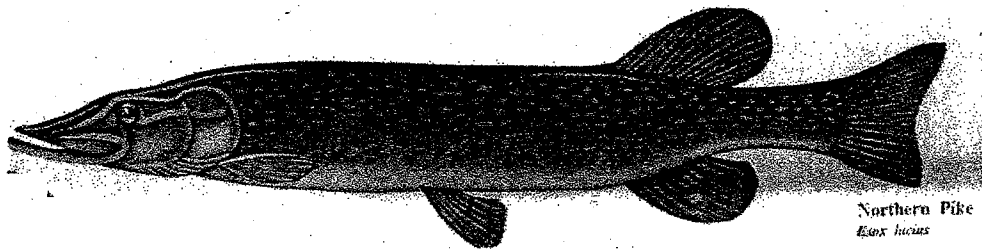


**Fried Flounder (Fish & Chips) 6 oz portion**

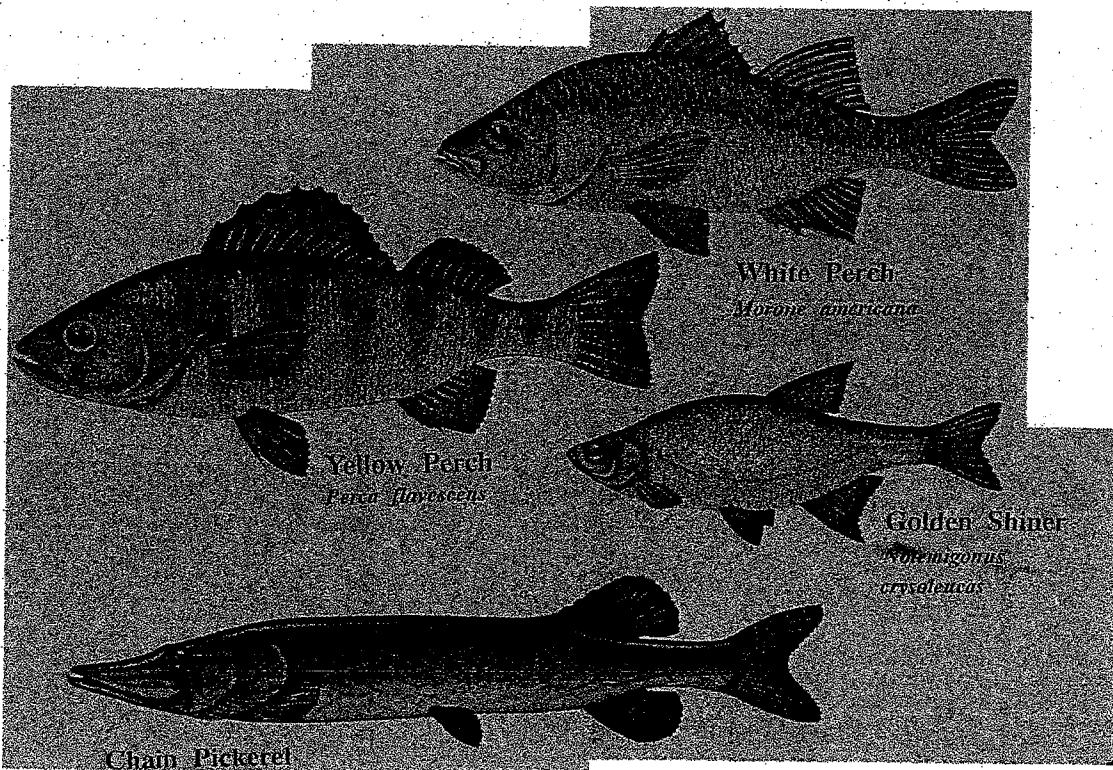
**ATTACHMENT F**  
**Common Fish Species of Massachusetts Identification Guide**  
**FRESHWATER FISH OF MASSACHUSETTS**

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Northern Pike  
*Esox lucius*

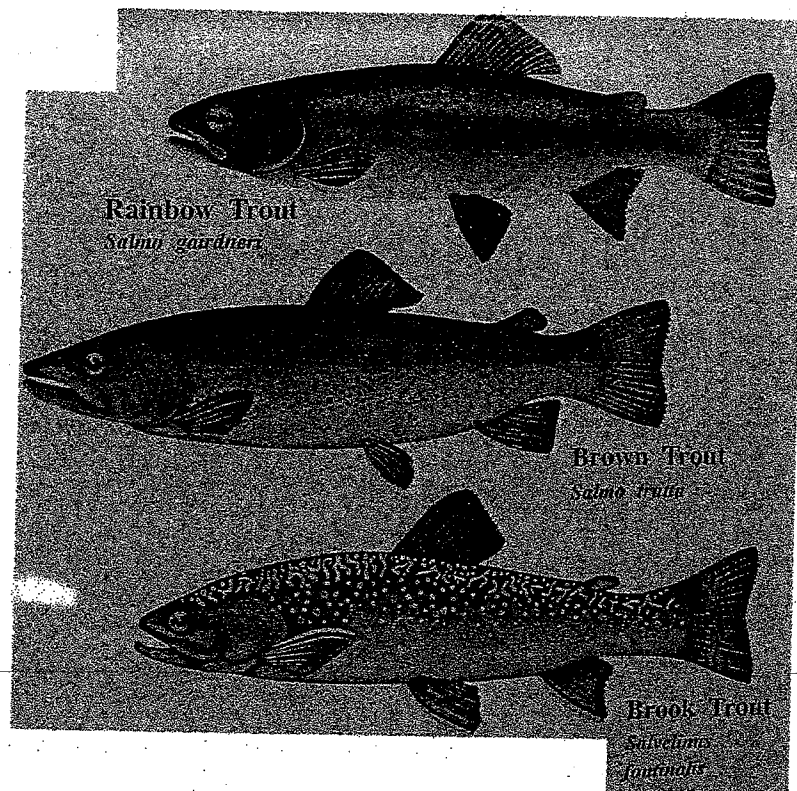


White Perch  
*Morone americana*

Yellow Perch  
*Perca flavescens*

Golden Shiner  
*Notemigonus crysoleucas*

Chain Pickerel



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# Massachusetts Saltwater Sport Fishing Guide

## Sport Fish Program

Michael Armstrong, PH.D., *Program Manager*



## Division of Marine Fisheries

Paul Diodati, *Director*

## Department of Fisheries, Wildlife & Environmental Law Enforcement

David M. Peters, *Commissioner*

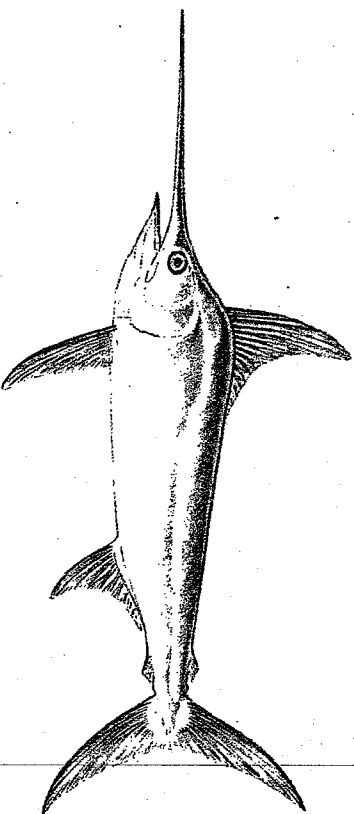
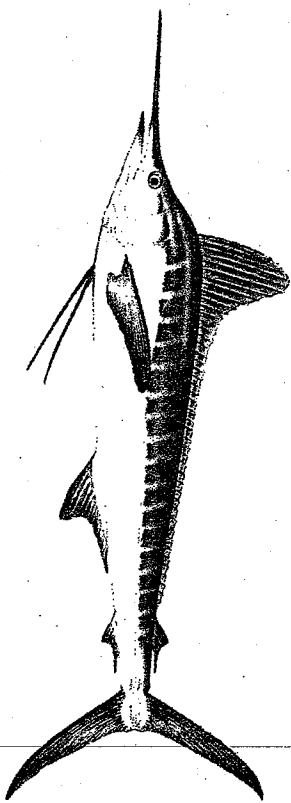
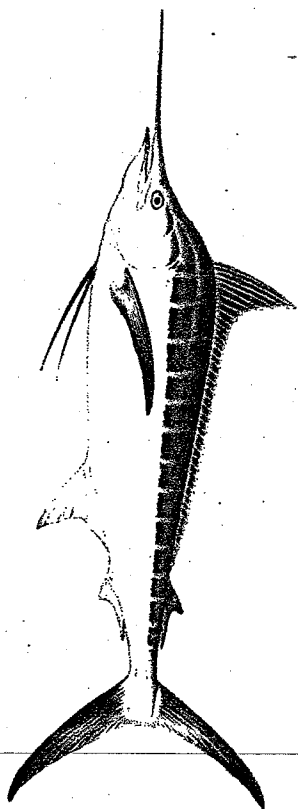
## Executive Office of Environmental Affairs

Robert Durand, *Secretary*

**Commonwealth of Massachusetts**

Jane Swift, *Governor*

## The Catch



### Bilfish: Blue Marlin, White Marlin and Swordfish

Blue marlin, white marlin and swordfish, are highly prized big game fish for the offshore angler. Blue marlin are the behemoths of this group and can reach up to 11 ft and have been known to exceed 1,000 lbs. White marlin are similar in appearance to blue marlin though they average a smaller size of 5 ft, which is roughly a 50 lb fish.

**Location:** Southern New England, offshore canyons, steep drop-offs on the ocean floor where current boundaries, thermal water fronts and upwellings tend to concentrate schools of bait.

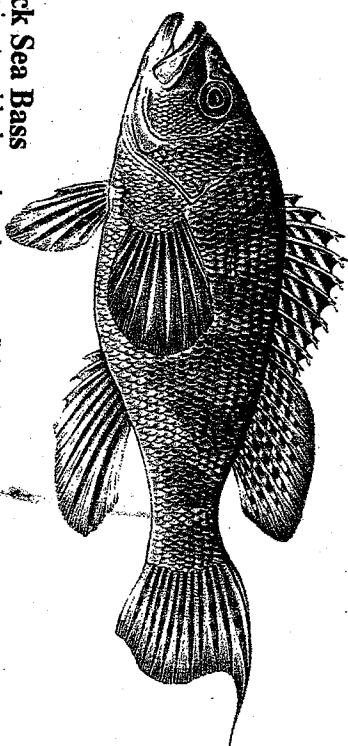
**Season:** July - September

**Baits & Lures:** Live or dead baitfish (eg. squid, mackerel, herring, scup) and artificial lures.

**Methods and Tackle:** Casting from a boat, trolling, medium to heavy tackle.

**Massachusetts Saltwater Fishing Derby Minimum Weights:** white marlin (60 lbs), blue marlin (250 lbs), swordfish (150 lbs).

**State Record:** white marlin 131 lbs; blue marlin 701 lbs; swordfish 646 lbs



### Black Sea Bass

The migratory black sea bass is a tasty fish arriving in our near shore waters in the late spring. These fish also have a peculiar life cycle - the majority begin life as females and then change to males at around three years of age.

**Location:** South side of Cape Cod, Buzzards Bay to Rhode Island border and a few are found in Cape Cod Bay. Fish for them around bottom structure such as reefs, rocks, and wrecks.

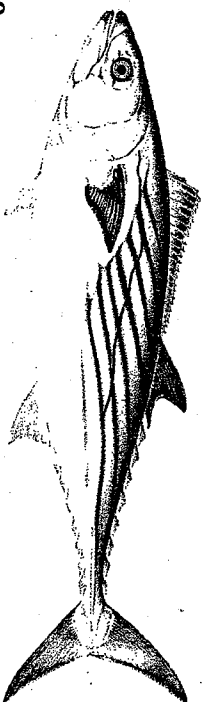
**Season:** May - September

**Baits and Lures:** Cut squid, clams, green crabs.

**Methods and Tackle:** bottom fish from a boat.

**Mass. Saltwater Fishing Derby Minimum Weight:** 3 lbs

**State Record:** 8 lbs



### Bonito

Sharpen your reflexes because these small tunas are fast and fun to catch. Watch for feeding schools where there will be jumpers. For a quick identification, look for dark bands running the length of the fish above the lateral line and a silvery belly.

**Location:** Southern Cape Cod and the Islands, rarely north of Cape Cod.

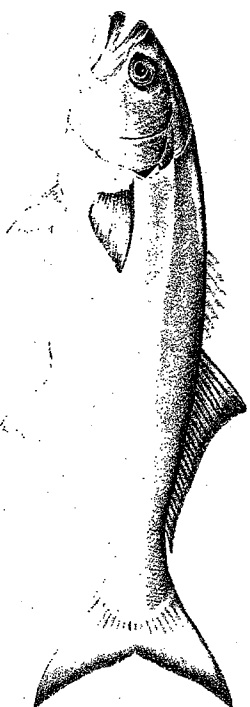
**Season:** Late July - October

**Baits and Lures:** Strip baits, squid, small jigs, spoons, plugs, flies.

**Methods and Tackle:** Spinning gear, bait casting, light boat rods, trolling, fly fishing.

**Mass. Saltwater Fishing Derby Minimum Weight:** 7 lbs

**State Record:** 12 lbs - 7 oz.



### Bluefish

Bluefish are usually ravenous and will strike at just about anything you give them. Watch out for those teeth! They average around 3-7 lbs along the coast and tend to be larger just offshore in the tips. The juveniles, referred to as "snappers," can be found in the estuaries

and are fun to catch with light tackle. In all cases, they put up an excellent fight all the way to your boat or shore.

**Location:** Whole coast surf, inshore bars, tide rips, bays and estuaries.

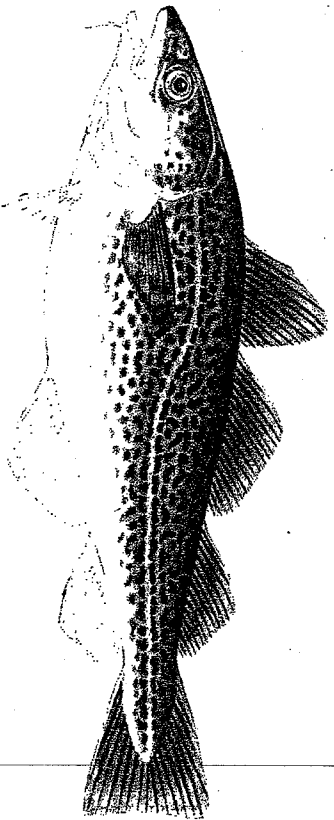
**Season:** June-mid October

**Baits and Lures:** All small bait fish, jigs, spoons, plugs, spinners, flies.

**Methods and Tackle:** Casting from shore or boat (You may want to use a wire leader) with spin and fly fishing gear, trolling.

**Mass. Saltwater Fishing Derby Minimum Weight:** 10 lbs

**State Record:** 27 lbs - 4 oz.



### False Albacore (Little Tunny)

False albacore are very similar to bonito - fast, fun and sometimes a bit tricky to catch.

**Location:** Mostly warmer waters of the south side of Cape Cod and the Islands.

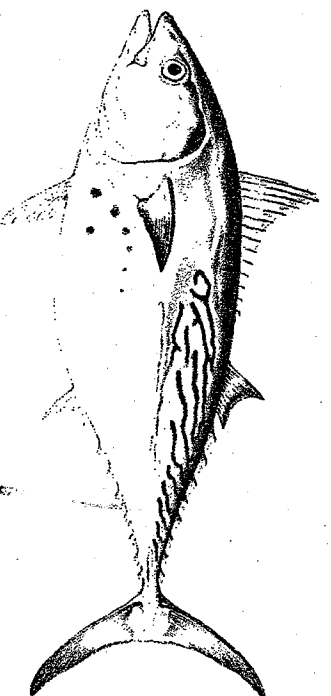
**Season:** Late July - October

**Baits and Lures:** Same as for bonito

**Methods and Tackle:** Same as for bonito

**Mass. Saltwater Fishing Derby Minimum Weight:** 10 lbs

**State Record:** 19 lbs - 5 oz.



### Cod

Codfish are the deepwater treasures of Massachusetts. They are the number one fish sought after by party boats throughout the state.

**Location:** Whole coast, deepwater, inshore while water is cold.

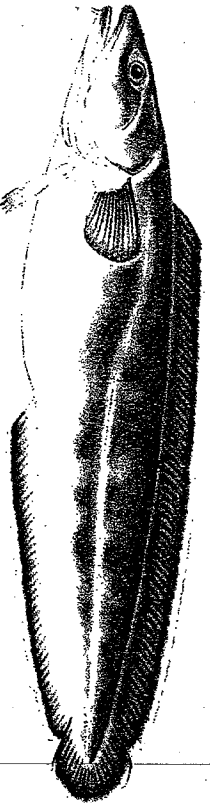
**Season:** Year round.

**Baits and Lures:** Sea worms, clams, mackerel, strips of all fish, crabs, jigs.

**Methods and Tackle:** Bait-fishing from shore and boats, fishing from boats using medium to stiff boat rod, conventional reel and at least 50 lb test line.

**Mass. Saltwater Fishing Derby Minimum Weight:** 25 lbs

**State Record:** 92 lbs



### Cusk

Like the cod, the cusk is a cool water fish and is found on hard, rough bottom habitat. Look for the continuous dorsal fin to assist with identification.

**Location:** Rocky ledges/hard bottom, moderately deep waters (more than 75 feet).

**Season:** Year round.

**Baits and Lures:** Same as cod.

**Methods and Tackle:** Same as cod.

**Mass. Saltwater Fishing Derby Minimum Weight:** 20lbs

**State Record:** 34 lbs - 4 oz.

### Haddock

Haddock is a member of the cod family and is a delicious fish for the dinner table. The black lateral line distinguishes it from the cod and pollock.

**Location:** Whole coast, cool waters, prefer depths of 140-450 ft., also prefers shell/sand, smooth rock or gravel bottom.

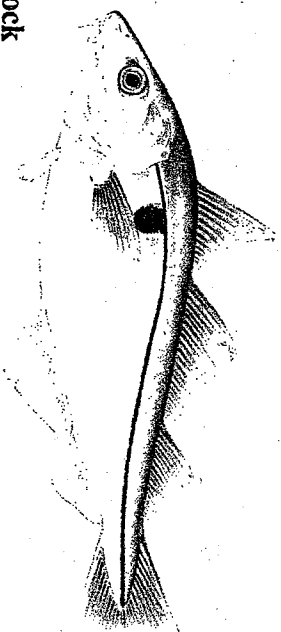
**Season:** May - November

**Baits and Lures:** Sea worms, clams

**Methods and Tackle:** Still-fishing from a boat, medium action rod

**Mass. Saltwater Fishing Derby Minimum Weights:** 8 lbs

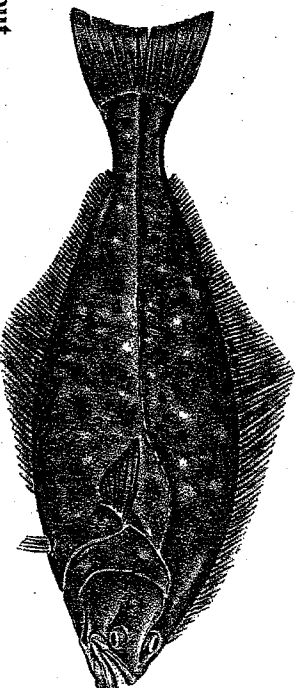
**State Record:** 20 lbs



### Halibut

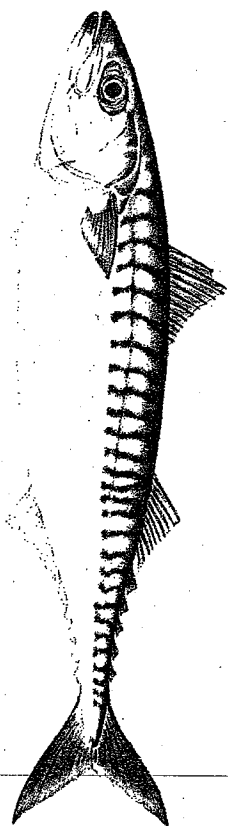
This is the largest of the Atlantic flatfishes, which if you do happen to hook one, can be very challenging to reel up from deep water.

**Location:** Whole coast, cool and deep waters, preferred bottom type is sand, gravel or clay not soft mud or rock.





**Season:** Year round  
**Baits and Lures:** Seaworms, clams, strips of fish, sand lance, jigs.  
**Methods and Tackle:** Fishing from a boat with medium to stiff rod.  
**Mass. Saltwater Fishing Derby Minimum Weight:** 50 lbs  
**State Record:** 321 lbs



## Mackerel

Mackerel are fast swimmers and voracious feeders, which offers the angler many options for catching them. They are also an important food fish for many other species of fish and marine mammals.

**Location:** Whole coast, deep water to shallow bays, beaches, jetties, canal, bridges.

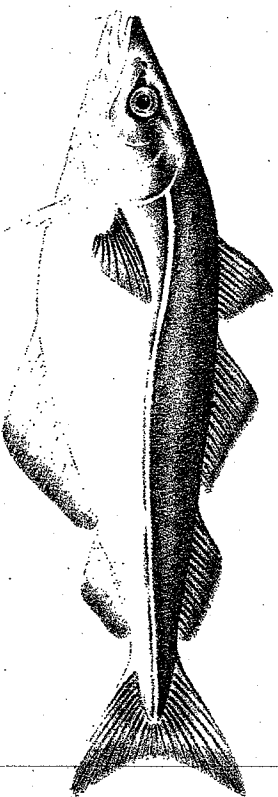
**Season:** May-September

**Baits and Lures:** Small bait fish, crab, clams, seaworms, squid strips, jigs, spoons, flies.

**Methods and Tackle:** Trolling, jigging, casting from shore or boat: light tackle.

**Mass. Saltwater Fishing Derby Minimum Weight:** 2 lbs

**State Record:** 3 lbs - 8 oz.



## Pollock

The pollock is more available to the angler than its codfish relative. These aggressive fighters offer the thrills of a bluefish and the flesh of a cod.

**Location:** Whole coast with more north of Plymouth. Inshore (breakwaters and other structures) and offshore depending on the water temperatures. Inshore, pollock tend to be smaller than those offshore.

**Season:** May-October with the best runs in May, Oct.

**Baits and Lures:** In deeper water use the same as for cod (jigs, clams...). Inshore waters try small plugs, Kastmasters, mackerel jigs, metal lures with a strip of squid.

**Methods and Tackle:** Still-fishing, casting, trolling. For deep water use same set up as for cod. Lighter spinning gear can be used for inshore fishing.

**Mass. Saltwater Fishing Derby Minimum Weights:** 20 lbs

**State Record:** 48 lbs - 2 oz.

## Scup

A party boat staple, the scup are easy and fun to catch. Scup are very good eating though be careful of the many bones.

**Location:** South side of Cape Cod and along coast to Rhode Island

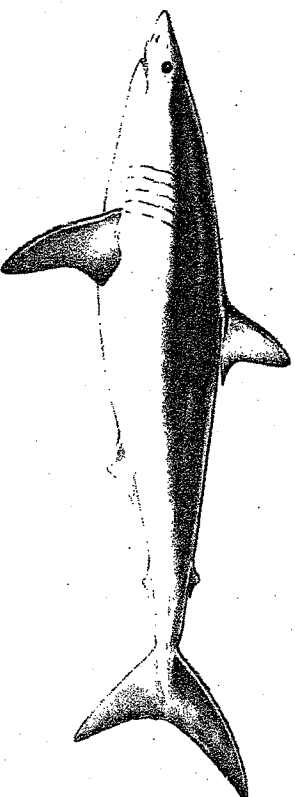
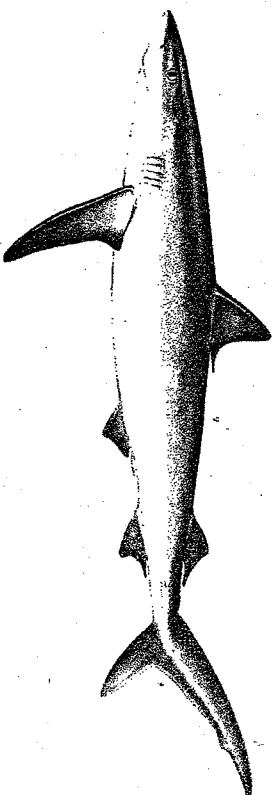
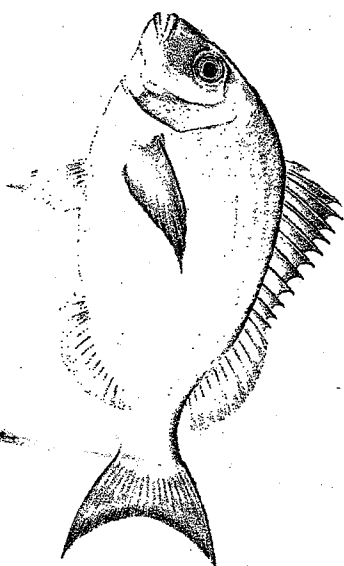
**Season:** May-October

**Baits and Lures:** Clams, strips of squid, seaworms.

**Methods and Tackle:** Light- to medium-weight tackle, drift-fishing, jetties, piers, bridges.

**Mass. Saltwater Fishing Derby Minimum Weights:** 2 lbs

**State Record:** 5 lbs - 14 oz.



## Sharks

Blue and mako sharks are common to our offshore waters and are sought after by recreational anglers. Makos are the more aggressive of the two fish and will put up an exciting fight. Venture with an experienced shark angler to prevent unexpected surprises and make sure you bleed and ice the shark flesh immediately. Anglers are encouraged to release sharks not intended for consumption.

**Location:** South of the Islands, East of Cape Cod, off North shore including Cape Cod Bay.

**Season:** June-October

**Baits and Lures:** Chumming and baited hooks (preferably oily fish)

**Methods and Tackle:** Trolling, drifting; medium to heavy tackle, wire leader.

**Mass. Saltwater Fishing Derby Minimum Weights:**

Blue shark 150 lbs; Mako shark 100 lbs

**State Records:** Blue Shark 454 lbs; Mako Shark 1324 lbs



**Location:** Offshore east of North Shore, Cape Cod Bay, East of Cape Cod, South of Islands offshore in Canyons

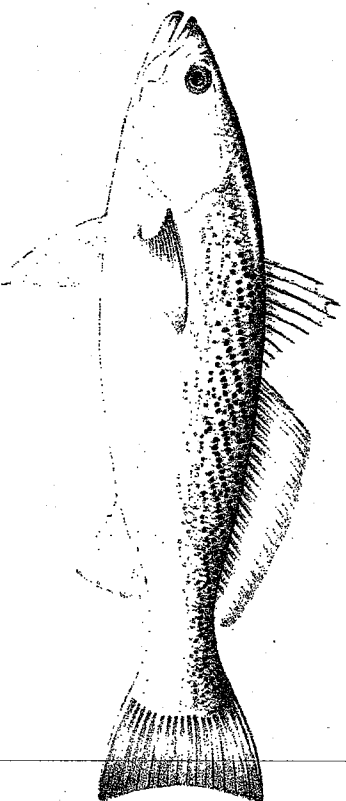
**Season:** Late June-October

**Baits and Lures:** Bait fish used with chum slick; plastic squids, multi-squid rigs, daisy chains, jigs, artificial lures

**Methods and Tackle:** Trolling, chunk baits with chum; medium to heavy tackle

**Mass. Saltwater Fishing Derby Minimum Weight:** Yellowfin tuna 50 lbs, bluefin tuna 300 lbs

**State Record:** Yellowfin tuna 187 lbs; bluefin tuna 1,228 lbs



### Weakfish (Squeteague)

The weakfish looks like a large trout and is found in Massachusetts waters during the summer months. Often found feeding alongside striped bass.

**Location:** Southern Massachusetts sandbars, deep water drop offs, channels, bays and estuaries

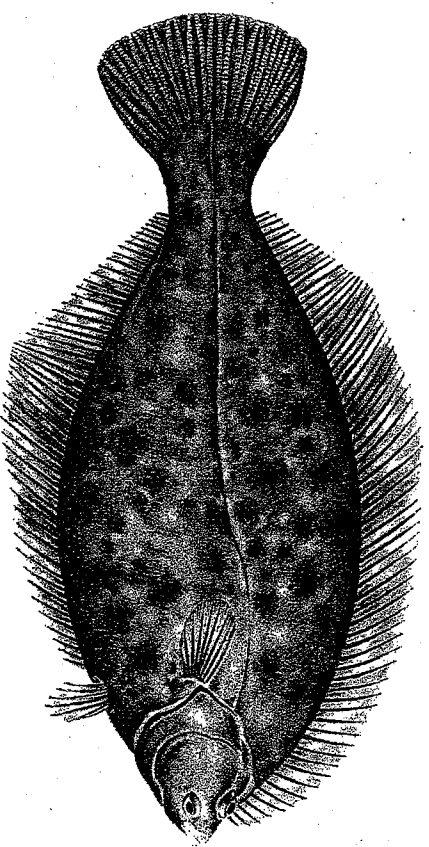
**Season:** Late June-September

**Baits and Lures:** Shrimp, seaworms,inker mackerel, eels, strips of squid; artificial lures (bright plastic shrimp, worms, bucktails, tubes, jigs, sand eel imitations)

**Methods and Tackle:** Still-fishing, drifting, chumming, casting from shore or boat, trolling; light to medium tackle.

**Mass. Saltwater Fishing Derby Minimum Weight:** 10 lbs

**State Record:** 18 lbs - 12 oz.



### Winter Flounder

The winter flounder (black back) provides good fishing during the cold weather months. They are very accessible and provide the angler with thick filets to take home.

**Location:** Whole coast, tidal streams, shallow bays, estuaries.

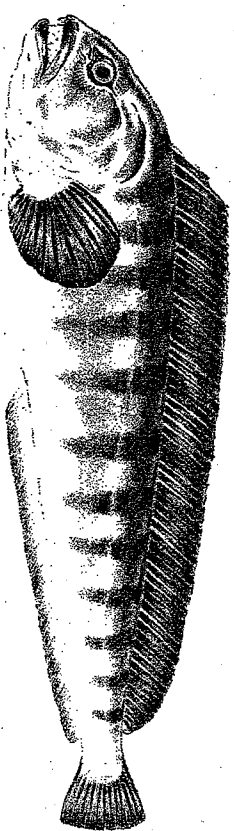
**Season:** May-February

**Baits and Lures:** Sandworms, bloodworms, clams, strips of squid.

**Methods and Tackle:** Chum pot (crushed clams), still-fishing from boats, piers, jetties, bridges, breakwaters; light tackle

**Mass. Saltwater Fishing Derby Minimum Weight:** 2 lbs

**State Record:** 8 lbs -2 oz.



### Wolfish

The wolfish are distinguished by their large size, pronounced molar and canine teeth, and the lack of ventral fins. They do not school and prefer hard bottom, not mud, in deep waters.

**Location:** Whole coast, deep water, incidental to codfish

**Season:** Year round

**Baits and Lures:** seaworms, shellfish, crustaceans, jigs

**Methods and Tackle:** Drift- or still-fishing from a boat

**Mass. Saltwater Fishing Derby Minimum Weight:** 20 lbs

**State Record:** 55 lbs

## **ATTACHMENT G TRAINING PROGRAM AGENDA**

The following is a draft of the training program that may be executed for the benefit of the Wampanoag Tribe personnel. The program may change based on subsequent comments:

### **Draft Outline of Training Class**

1. Fish Consumption Survey (Overview- Why we are here?)
  - a. Purpose of the survey
    - Goals and objectives
    - how data will be used
  - b. Fish and shellfish in our diets
    - nutritional aspects
    - concerns with contaminants in fish; health effects
    - how to address health concerns
    - use of fact sheets
2. Identification of fish and shellfish (May be accomplished at another meeting.)
3. Scientific Aspects of Surveys (How is it done?)
  - a. How to administer the survey
    - Interviewing techniques
    - Do's and Don'ts
    - Leading questions
    - Introducing bias
  - b. Importance of missing data
    - The importance of quality control
  - c. Data Entry Training
    - What the data entry form looks like
    - What if I make a mistake?
    - Pitfalls to Avoid
4. Practice Interviewing (HRC highly recommends that time be set aside so that each interviewer can practice methods of interviewing.)
  - a. When people will not provide answers
  - b. When people are not home

Pilot Interviews (discuss the next steps; Pilot and Main surveying)

The Ranger can provide feedback to HRC with respect to the findings of the pilot survey. The team can then decide on any modifications.

## Materials for Training

### Notebooks with:

1. Background on Wampanoag Tribe Fish Consumption Survey
    - a. Survey Proposal
    - b. Survey instrument
    - c. Annotated notes on survey (what to say and not to say)
  2. Background on Conducting surveys
    - a. Interviewing techniques
    - b. List of DO's and DON'T's
  3. Background information on fish/shellfish consumption
    - a. Historical information gathered on consumption
    - b. Fish and Shellfish species  
photos of fish species
    - c. Nutritional information on fish in our diets
    - d. Health effects of contaminants in fish  
Fact sheets
    - e. Models for fish meal portions
-

**ATTACHMENT H**

**WRITTEN PROCEDURES FOR  
INTERVIEWERS TO FOLLOW**

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## Written Procedures for Interviewers to Follow

The following are brief instructions for interviewers to follow before, during and after the interview.

### *Before the interview:*

It may take several attempts to contact and/or make an appointment with study participants. The front page of the questionnaire has fields for the interviewer to indicate date and time attempts were made to contact the household as shown below. Make sure that each and every page contains the Questionnaire number on it. It is located in the bottom, right hand corner of each page. The numbering system will include a household number, followed by a person-data reference number, followed by a location code. An example of a number might be as follows: 001-R-A, where 001 corresponds to household number; R refers to answers that pertain the person answering the survey questions; and, A refers the town they reside in. It is particularly important that, in households with more than one member, some questions (e.g. 4, 5, and 6) will be repeated for each person in the household. The questionnaire numbers then might look like this: 001-02-A, where 001 refers to the same household, 02 refers to person number 2 (as designated in beginning of the questionnaire), and A, again corresponds to the town.

### **DATE CONTACTED to establish interview:**

*(Enter month/day/year, and time of day. Allow up to eight attempts to arrange an appointment. Enter Code NR for no response of L/M for left message with someone who answered the phone or answering machine/voice message system. Enter C for completed call.)*

1) date/time _____	Code _____	5) date/time _____	Code _____
2) date/time _____	Code _____	6) date/time _____	Code _____
3) date/time _____	Code _____	7) date/time _____	Code _____
4) data/time _____	Code _____	8) date/time _____	Code _____

Once the interview is scheduled, it is possible that something may come up and the interview may not take place. When setting up the appointment, it will be important to give the participant an idea about the time involved (approximately one hour) in conducting the interview and its purpose. Below there is a script that can be used both for setting up the interview and for the actual interview as it provides information about time commitment and how the survey is set up.

Three attempts should be made to schedule the appointment. Please indicate where the interview took place. Once the interview is completed, then the interviewer can circle interview results codes 1, 2, or 3. If the interview does not take place, then there are a number of reasons provided as to why the interview did not take place, also shown below. It is just as important to fill the non-interview reason out as it is to conduct the interview. The following is contained on the front page of the survey form:

**INTERVIEW APPOINTMENT DATE/TIME/LOCATION:** (Use 2 and 3 only if respondent asks to change original appointment, circle interview location.)

1) MONTH/DAY/TIME  
(originally set)

2) MONTH/DAY/TIME  
(first change)

3) MONTH/DAY/TIME  
(second change)

Respondent's Home  
Tribal Center  
Other \_\_\_\_\_

Respondent's Home  
Tribal Center  
Other \_\_\_\_\_

Respondent's Home  
Tribal Center  
Other \_\_\_\_\_

Notes: \_\_\_\_\_

Date of Interview \_\_\_\_\_ Time Interview Begins \_\_\_\_\_ AM

\_\_\_\_\_ PM

Below are the codes for assessing where the interview was completed, if it did occur as well as codes for assessing why the interview did not occur:

**INTERVIEW RESULT CODES:** (Complete this section by circling the appropriate code.)

1. Completed interview at home.
2. Completed interview at Tribal Center or other location.
3. Not at home at time of visit; need to re-schedule.
4. Missed appointment at Tribal Center or location; need to re-schedule.
5. Moved within survey area; need to re-schedule.
6. Moved out of survey area, or no current address.
7. Total refusal to participate. Reason: ☐ Does not consume fish or seafood ☐  
Other: \_\_\_\_\_
8. Refusal to participate stated at beginning of the interview by respondent or other family member.
9. Interview not completed.  
Reason: \_\_\_\_\_

INTERVIEWER'S INITIALS \_\_\_\_\_

The following data fields, located at the bottom of the front page of the survey form, are to assist the quality control/quality assurance process. Please be sure to date and initial if you have edited, entered data, or verified the data entry process by comparing the original survey to the database spreadsheet.

EDITED: date \_\_\_\_\_ By \_\_\_\_\_

DATA Entry: date \_\_\_\_\_ By \_\_\_\_\_

VERIFIED: date \_\_\_\_\_ By \_\_\_\_\_

Note space for editor: \_\_\_\_\_

### ***During the Survey:***

The survey itself has instructions throughout the form. In fact, the second page contains a script that should be used when the interviewer is introducing:

*Interviewer: Please read as stated below without additions or deletions the information provided to the respondent. It is important that the respondents understand the purpose of the survey, how their answers will be used and how we will protect confidentiality.*

*Hello, my name is \_\_\_\_\_, and I represent the Wampanoag Tribe of Gay Head (Aquinnah). We appreciate your willingness to participate in our fish and shellfish consumption survey.*

*As mentioned in the letter about the Survey project we sent you, the information given in response to this questionnaire with help the Wampanoag Tribe of Gay Head to understand the rates of fish and shellfish consumption, how fish and shellfish are prepared and cooked, the species or types of freshwater and saltwater fish and shellfish regularly consumed and the locations where they are harvested and/or purchased.*

*All of the information which you provide to us during the interview is confidential. Your responses to the questions will be combined with those of others so that your answers cannot be identified. No personal identifiers will be used. The household and individual members that provide answers to the questionnaire are identified by a numbers. Once the survey is complete, there will be a report completed summarizing the results. All households of the Tribe will be sent a copy of this report. In the meantime, if you have any questions, you are welcome to call the Natural Resources Office. Here is our card and the Project Coordinator phone number at the Tribal Center.*

*At this juncture, we estimate that the interview will take about one hour. It is in four sections. In Section One, I have noted the date and time and location of this interview. In Section Two, I will ask you to tell me whether each person in your household eats fish and shellfish, how often and how much is eaten as a meal. In Section Three I will ask about particular types of fish and shellfish you eat and where you purchased and/or harvested in the past year. Section Four will focus on how you prepare and cook fish and shellfish meals. Finally, I'll ask for some general background information.*

Throughout the survey, there are some prompts to questions, but generally, the rule of thumb is to simply repeat the question. As emphasized in the training session, it is not the place of the interviewer to make judgment comments about the answers. Please refer to the training manual for more specifics on the do's and don't's of surveying techniques.

### ***After the Survey:***

After the survey form is completed, the interviewer asks the participant to sign the last interview page, indicating that the interview actually took place. As a measure of controlling access and privacy to the information contained in the survey, the interviewer



will then hand the participant an envelope and ask that he or she place the survey inside the envelope.

The interviewer has completed the interview, there are some questions regarding how well the interview went. These are more subjective questions and are more appropriately answered in the car (so that the impression can be recorded and not, perhaps, be confused with another participant's interview) or away from the location where the interview took place. The following questions are asked:

**INTERVIEWER NOTES:**

26. The respondent's cooperation was: (*circle one*)

1=very good

2=good

3=fair

4=poor

27. The reliability of the respondent's answers was: (*circle one*)

1=highly reliable

2=generally reliable

3=questionable

4=unreliable

28. If the reliability of the respondent's answers was questionable or unreliable, what do you think were the main reasons?

29. Please use the space below to enter notations and any remarks you might want to make about other aspects of the interview.

There will be room for ample answers, if needed.

**ATTACHMENT I**  
**Quality Control /Assurance Check-off Form**

HOUSEHOLD ID # \_\_\_\_\_ SURVEY FORM TRACKING NUMBER # \_\_\_\_\_

**INTERVIEW & COMPLETED SURVEYS**

Person Performing Interview \_\_\_\_\_

Person Assisting Interviewer \_\_\_\_\_

**Certification of Completion of QA of Survey Documented responses on site of**

Interview completed by \_\_\_\_\_ on this date \_\_\_\_\_.

**COMPLETED SURVEYS AND TRANSFER TO CODED RESPONSE FORM**

Data from field Survey form was transferred to Coded Response form # \_\_\_\_\_

By \_\_\_\_\_ on this date \_\_\_\_\_

QA of data reported on Coded Response Form was QA tested by Jeff Day

On this date \_\_\_\_\_ at this time \_\_\_\_\_.

**DATABASE DATA ENTRY QA**

Data from coded response form # \_\_\_\_\_ uploaded to database into

File Name \_\_\_\_\_ by \_\_\_\_\_  
(name of person uploading data)

on this date \_\_\_\_\_ and time \_\_\_\_\_.

DATA contained in this Spreadsheet (FILE NAME) \_\_\_\_\_

has been reviewed by JEFF DAY and accurately represents data obtained and

transferred from Survey Form Tracking # \_\_\_\_\_.

This QA was completed on this date \_\_\_\_\_ and time \_\_\_\_\_.

**FINAL DATA VAILDATION COMPLETED BY** \_\_\_\_\_

on this date \_\_\_\_\_ and Time \_\_\_\_\_.